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British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924.

SECTION OF ORTHOPAEDICS.

R. C. ELMSLIE, O.B.E., M.S., F.R.C.S., President.

DISCUSSION ON THE TREATMENT OF HALLUX VALGUS AND RIGIDUS.

OPENING PAPER

BY

SIR ROBERT JONES, K.B.E., C.B., F.R.C.S.,
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HALLUX VALGUS is a deformity of the first metatarso-phalangeal joint where the great toe is deflected outwards, or, in other words, adducted towards the centre of the foot. There may or may not be disability as a consequence, and if there is it does not necessarily depend on the degree of adduction. If the adduction is extreme the second and, sometimes, the third toes are either over- or under-lapped, or in certain cases may only be deflected outwards. A bursal enlargement over the dorsal and inner side of the head of the metatarsal occurs in a considerable proportion of cases where the lateral angulation is extreme. Even the presence of the bursa may give rise to scarcely any discomfort.

Pronounced hallux valgus, therefore, like many types of flat-foot, may exist merely as a harmless deformity, and need not, save for aesthetic reasons, come under the notice of the surgeon. Furthermore, the feet of the majority of adults would not conform to the normal standard, which insists that the phalanges should be in a line with the metatarsal bones. In the early stages of the deformity the toe can be easily placed in correct alignment, later the deformity is fixed and cannot be overcome by manipulation. The deformity usually develops after the age of 25, but should it occur during the athletic stage a complaint is sometimes heard that efficiency is lessened. I was consulted by a famous sprinter with a left-sided valgus, and he told me that he had been obliged to start his sprinting with his right foot as his left big toe had weakened. He had no other disability. By correcting the deformity and restoring the alignment of the extensor proprius hallucis he was enabled to renew his practice of starting his races with the left foot forward. Several instances have been brought to my notice where the deflected toe appreciably weakened the fore part of the foot. This is to be expected when we reflect upon the part played by the big toe in walking and in running. This toe has a responsibility surpassing that of all the others in what, I presume, we all agree is the correct method of walking—namely, the alternate heel and toe—and in running it requires to be abducted to ensure its strongest grip. Except in the case of the athlete, who requires every atom of power, these points will not arise—the adducted toe will generally suffice.

When the surgeon is consulted he is faced with the problems of pain and discomfort, and only occasionally does a patient come to him solely because of the deformity. There have been endless theories as to the etiology of the deformity, and I will not trouble you as to whether the ligaments or the muscular system or the joints are at fault, but I prefer to emphasize my belief that in the vast majority of cases the demands of fashion are to blame. It is a question of boots—they are the exciting cause—ligaments and muscles and joints are merely their victims. The deformity is a postural one in the first instance, an organic one later. It is an outcome of our so-called civilization, which demands that our feet should be moulded to a covering which has no reference either to the shape or the size of the foot. All investigations have borne out the statement that primitive races exhibit well developed and normal toes. I need only allude to the Abyssinians, certain South African races, and the American Indians. All these races practise a heel-and-toe walk and can abduct their big toe. They walk with parallel feet, some of them pigeon-toed, and although the longitudinal arch is often flattened they do not exhibit the everted foot. If the toes are pointed forwards eversion cannot take place, for the foot becomes a lever of propulsion, the muscles and joints being constantly exerted. The rolling everted foot is no longer a lever, and the muscles of the sole and calf are proportionately attenuated.

The studies of Hoffman, who investigated the feet of barefooted Philippine and Central African races, bear out the conclusions of other observers. In the primitive foot, as in the shoeless child, the movements resemble those of hands, and the great toe can be abducted almost as a thumb. Furthermore, the metatarso-cuneiform joint allows of very considerable movement, suggestive of the metacarpal of the thumb. We have all seen the extraordinary development of the functional activity of the toes found in armless humans. A child at Baschurch Hospital afflicted by infantile paralysis of the arms learnt to perform practically every action which could be done by the hands, and the parents were very loath that she should undergo any treatment for the arms which might hinder the functional development of the toes. It was found by Hoffman that the widest part of the undistorted foot corresponded to a line drawn from the top of the fifth toe transversely across the foot. In a conventional shoe this, as we know, is anything but the case. The phalanges in an undistorted foot should be in a line with their several metatarsals, and when weight is borne the toes separate and widen the base of support. The great toe, to be at its greatest functional efficiency, should be apart from its neighbour by a wide interval. It thus forms a support which assists in adducting the foot. I have been at pains to dwell on this etiological factor as there is a tendency to overemphasize exceptional cases where the deformity could not be ascribed to the boot, and to instances where atrocious boots have not given rise to pain and disability. I have never seen a normal foot in women who have worn fashionable boots, although many have escaped pain and disability, which, as we know, only affect comparatively few.

What are the causes of pain and disability? Generally the formation of a bursa or bunion, which becomes painful when inflamed. This bursa does not always develop in the same spot. When the deformity is but moderate it may be situated more on the dorsal aspect of the joint, when extreme it is found almost wholly on the inner side of the joint. At this stage the head of the first metatarsal has undergone certain changes. The cartilage, which is unopposed, is thinned, and if arthritis is present may present erosions and lipping, similar to that found in osteo-arthritis. Osteophytic deposits may be felt beneath the bursa, and a subluxation of the phalanx is present. The flexors and extensors of the toe-joint are displaced outwards, and are important agents in adducting the toes. The sesamoids are often found to one or other side of their normal position. The internal lateral ligament is very much stretched and is generally thickened. The bursa, which may be multilocular, sometimes communicates with the joint. The external lateral ligament is short and thick, and frequently an irregular thickening is found at the inner side of the base of the first phalanx. The sesamoids sometimes show inflammatory change and pressure erosion. Corns may develop on the skin covering the bursa. The bursa sometimes perforates and a sinus may persist if suppuration occurs, and in rare cases this may be connected with the joint.

A hammer-toe is frequently associated with hallux valgus, and is usually caused by it. We rarely meet a pronounced case unless it is accompanied by a flattening of the longitudinal and transverse arches.

The symptoms of hallux valgus, as the pathology suggests, may be very trivial or extremely severe. They may be due to inflammation of the bursa, periostitis around the edges of the capsule, traumatic arthritis, either simple or of the osteo-arthritic type, osteophytic pressure on the digital nerves—all these often complicated by the presence of

adhesions. In a small proportion of cases callosities may form under the head of the first metatarsal bone, and these are largely the result of the flattening of the transverse arch, while corns and callosities may be found over the second and third toes. The symptoms, therefore, may be ascribed to strain and pressure.

Hallux rigidus is allied in its etiology and pathology to hallux valgus. It is, however, more frequently associated with an injury, and we find it often in the footballer who has passed his prime. It is a progressive lesion, and in the later stages may present very marked arthritic changes with enlargement of the metatarsal head. In elderly subjects the condition cannot be distinguished from osteo-arthritis. Here again we have flattening of the arches, but callosities under the metatarsal head are not so common. Bursae may form on the dorsal aspect of the head, but they are comparatively rare.

The symptoms complained of in the early stages are those of a simple sprain developing into chronic arthritis. The only objective sign is that of deficient dorsiflexion. Attempts to straighten the toe give pain. In the later stages the toe is fixed in plantar flexion, and walking becomes a very painful act, relieved sometimes by dorsiflexion of the terminal phalanx. The fixation of the toe-joint is first a protective spasm, but later the joint and periarticular structures show signs of chronic inflammatory changes which prevent motion.

When pain is associated with hallux valgus it is due to: (*a*) an inflamed bursa; (*b*) arthritis, as in hallux rigidus; (*c*) osteophytic pressure on the digital nerves; (*d*) callosities under the joint.

TREATMENT.

Surgeons are apt to display unjustifiable optimism when they discuss the results of treatment. In my opinion we should be extremely careful as to prognosis. Results in every type of case are sometimes brilliant—but not always. Care should be taken to find out precisely the chief disability of which the patient complains. Is it the bunion, or the callosity under the toe, an arthritis, or the irritation of osteophytes? May not the discomfort arise from the adjoining hammer-toe, from metatarsalgia, or from flattened arches? The surgeon should know definitely whether the operation he proposes to perform will meet not merely one but every indication. There is no apparition more unpleasant and accusing than the lady who declares that her foot is worse than it was before the surgeon intervened. If she complains of pain and desires to be eased, and operation has failed to make her comfortable, it is of no avail to try and persuade her to be contented with a reconstructed and artistic joint. She asked for comfort, and she failed to get it.

The treatment of hallux valgus may be considered under three heads in relation to pain and disability: (*a*) preventive; (*b*) mechanical; (*c*) operative.

Preventive Treatment.

If the deformity is in its postural stage our object will be to prevent further adduction of the toe, and correct any accompanying flattening of the arches. We are rarely consulted at this stage, and then only for aesthetic reasons, for usually there is neither pain nor disability. We should treat the flat-foot in accordance with principles which we individually cherish, and see that the footgear does not encourage the deflection of the toe. Correct shoes or boots should be insisted upon. Perhaps I may be excused if I again emphasize the essentials of a correct boot. It should fit moderately closely around the heel and ankle to prevent lifting of the heel in the boot. The inner side of the boot should be straight right up to the tip of the big toe. Any outward deflection favours the production of hallux valgus. The sole of the boot inside should be as broad as the foot under the strain of body weight. The upper part of the boot should not compress the forefoot. The toecap should be sufficiently roomy to allow the free play of the toes, and should be higher on the inner than on the outer border. It must be long enough to allow the foot to extend to its full length. Stubbing of the great toe is an exciting cause of hallux rigidus.

If these points are laid before the patient who suffers only from deformity but has no pain, she will be quite unhappy, and will ask, "Can nothing be done to my toe which will render such footgear unnecessary?" My answer has always been, "If I operate on your toe, and you wear your favourite shoes, then the deformity will return." I confess to being very averse to operating upon hallux valgus for aesthetic reasons unless I am given a free hand as to after-treatment. It is an unscientific proceeding and ends in worry. Removal of the head of the metatarsal is too radical; shaving the metatarsal head does not correct the deformity. The effective operation is to take a wedge from the neck of the metatarsal quite close to the head, but in twelve months the deformity will have returned unless the fashionable boot is discarded. Many years ago I used to make an incision on the inner side of the foot, subcutaneously divide the tight structures on the outer side of the joint, and exsect and reef the capsule on the inner side. The toe looked perfect after the operation, but the end-results were entirely in the hands of the patient, and were therefore usually unsatisfactory. The same may be said of transposition of the extensor proprius hallucis to the inner side of the base of the first phalanx. My experience of these and many other methods leads me to the conclusion that it is inexpedient to operate on the toe-joint for the correction of deformity, where function is good, unless an appropriate after-care is assured.

Mechanical Treatment.

This should consist in relieving the joint from pressure. The sole of the boot should be thick enough to prevent strain on the toe in walking, and a bar of leather should be placed transversely across it just behind the metatarso-phalangeal range. The upper part of the boot should not press upon the inner side of the joint but be moulded out on a last, or the joint may be protected by the application of a horseshoe-shaped pad of adhesive felt with the base above. I have lost all confidence in toe-posts or external splinting. They are uncomfortable and ineffective. If a callosity is present below the joint the boot may be hollowed there, but if this is done it is advisable to place within the boot a thick felt sole reaching from the heel to a point just behind the metatarso-phalangeal range. The heel of the boot should be made higher on the inner than on the outer side in order to deflect the body weight from the great toe, and also to correct the flat-foot. If arthritis is not a feature gentle manipulation prevents the formation of adhesions, and the patient should practise active movements, preferably in hot water, every night and morning.

If the bursa is inflamed absolute rest should be prescribed, and if great pain is present ease is often secured by the application of fomentations. If the bursa suppurates the abscess should be opened.

One knows only too well that these conservative methods have their limitations, but it should not be forgotten that markedly pronounced hallux valgus is often painless, and it is only when an inflamed bunion supervenes that treatment becomes necessary. Once the bursa recovers pain disappears, and this is frequently brought about without operative intervention. I have known many instances of this sort where the experience of a painful bursa has overcome a patient's objection to an appropriate boot, the wearing of which has resulted in prolonged immunity from recurrence.

Operative Treatment.

We should mention, in order to condemn, certain procedures which are being practised. We not uncommonly find suppurating joints due entirely to the fact that the surgeon has attempted a reconstructive operation during the inflammatory stage of the bursa. This condition is very apt to occur, and it is essential to allow an interval of a few weeks to pass between the recovery of the bursa and the operative attack. Cases also are found when both hallux valgus and hallux rigidus are treated by excision of the joints. It is liable to result in a painful ankylosis for which it is difficult to find a remedy. This operation should never be performed.

Another useless operation is that of exsection of the bursa without reference to the roughened bony prominence of the metatarsal head. Equally futile is a transplantation

of the extensor proprius hallucis either into the metatarsal head or to the base of the first phalanx.

The aims of operation should be the correction of deformity, the restoration of movement, and, when possible, the preservation of the weight-bearing portion of the head.

There are four types of operation which may be considered:

(*a*) The removal of the bony prominence on the inner side of the foot, together with the bursa.
(*b*) Osteotomy of the neck of the metatarsal.
(*c*) Removal of a part or the whole of the head of the metatarsal.
(*d*) Removal of the base of the first phalanx.

Before performing any of these operations I endeavour to find out where the pain is most severe. Is it over the inflamed bursa, or confined to the joint? Is it referable to the callosities or to the space between the first and second metatarso-phalangeal joints? Is the pain indueed when the toes are pressed together? If pain is confined to the region of the bursa and there is no evidence of an arthritis of the joint, I am content to remove the lateral prominence of the metatarsal together with the bursa, divide the extensor proprius hallucis, which helps to maintain the deformity, and to divide the capsule and shortened structures on the outer side. If the valgoid deformity is not too pronounced and displacement can be rectified without much force, I pass a deep suture through the structures on the inner side of the neck of the metatarsal and the base of the first phalanx, which acts as an internal splint when tightened. This operation generally succeeds in affording relief and in minimizing deformity.

Removal of the head of the metatarsal I reserve for extreme cases of hallux valgus associated with bunion where the head is rough and painful, and the joint tender. It is an operation more suited to the elderly than to the young and athletic, and should never be performed if relief can be obtained by less drastic methods. A patient who is in great and fairly constant pain will be well satisfied by the result of this operation, even if his foot remains weaker because of the loss of support. It is prudent to warn the patient who submits to the exsection of the head that his foot may be less effective as a support than the sound one, and that in a certain proportion of cases the metatarso-phalangeal range may give trouble and form a plantar prominence. As a rule the operation is a distinct success and enables a patient to carry on painlessly even if his habits involve strenuous exercise of the feet.

Where osteo-arthritic and periarthritic changes are present and the toe presents a large and gouty-looking prominence it may be necessary to remove about half an inch of the neck. If this is not done a firm, fibrous, but painful ankylosis is likely to occur. I have several times experienced this in middle-aged people. In the athletic, when the head has to be removed and where the support of the arch is very necessary, an endeavour should be made to leave as much bone below as is possible. The tightened structures on the shortened side should be severed and extension applied to the toe in such cases. The danger lies in too close an approximation of the phalanx to the metatarsal, with resultant pain and stiffness. This may be avoided by keeping the surfaces well apart until the wounds are healed, and then encouraging active and passive movements. There is no need to describe this operation. It should be in the nature of a pseudarthrosis with the intervention of a flap, the tightened structures on the outer side should be released, and the extensor proprius hallucis should be divided. There is no object in fixing the tendon into the base of the phalanx as it would tend to approximate bones which we desire to keep apart. I need not dwell upon the great importance of making the section of bone clean and workmanlike. Any spicules of bone left give rise to trouble.

Where hallux valgus is accompanied by plantar callosities excision of the head should be the operation of choice. Contrary to the general view, I am disinclined to remove the sesamoids unless there is a clear indication. They form a very excellent buffer between the skin and bone, and when the head of the metatarsal is removed they recover from pressure irritation. A splint keeping the toe well abducted should be employed during the healing of the wound. Occasionally one meets with a prominent osteophyte on the inner and lower part of the neck of the metatarsal in an otherwise painless hallux valgus. Pain of an acute type is felt on pressure from above and below between the first and second metatarsals. It is the same kind of pain experienced in metatarsalgia, and is, I believe, due to the same cause. As in metatarsalgia, the pain may be acute for a week or a fortnight, and then remain in abeyance until something occurs to make the nerve again hypersensitive. Relief is obtained by chiselling away the osteophyte. It is very rarely necessary to remove the head of the bone.

Removal of the base of the first phalanx, first of all suggested by Davies-Colley, and several years later by Steele and Keller, has, in my opinion, a distinct place in the surgery of hallux valgus and rigidus. It is indicated in the young and athletic where deformity is of no great importance, and where the maintenance of the strength of the forefoot is paramount. It is especially useful in those cases where pain is limited to the joint, and where the bone surrounding the head is smooth and painless. It is not suited for those cases where pain is located at the under or outer side just below the head. The operation is very simple. An incision about two inches in length is made on the inner side of the joint which is exposed. The articular ends are separated and about a third or more of the first phalanx is removed. If a bursa is present it can be removed together with the bony prominence. This operation has the great merit of relieving the arthritis, while it does not interfere with the integrity of the transverse arch.

Hammer-toe is so often associated with hallux valgus that it demands consideration. Often the condition is a crippling one only because of a painful corn. It is useless to excise the corn, and a tragedy to amputate the toe. We have all been asked to amputate the toe, and I hope we have always refused to do so. When the toe has been amputated in the absence of hallux valgus the operation has been the direct cause of the deformity. The most effective treatment is division of the dorsiflexor and removal of the corn, and ankylosis of the joint. Division of the capsule and forcible rectification are quite inadequate.

Hallux rigidus is a chronic irritative arthritis in which deformity plays but little part. Pain and disability are due to plantar flexion, and every attempt to rise upon the toe strains the joint. Callosities under the toe are comparatively rare, but lipping in the later stages is frequent and may be found both on the upper portion of the metatarsal head and the first phalanx. It is even in its early stages complicated by adhesions.

The operative treatment of hallux rigidus is to aim at securing mobility without friction. Whenever possible the head of the bone should be preserved, and the operation of choice should be the removal of the base of the first phalanx. Much relief may follow manipulation in the early stages of this affection.

SUMMARY.

Both hallux valgus and hallux rigidus are closely associated with flattened arches. A flattened arch aids in the production of a hallux valgus by altering the line of pull of the extensor proprius hallucis, and a hallux rigidus aids the flattening of the arches because the foot is deprived of the free propulsive action of the big toe.

The leverage action of the foot as propulsive agent is most effective in a toe-and-heel walk with the feet parallel and the big toe slightly abducted.

The etiological factor which is mainly responsible for the weakened arch and adduction of the big toe is the modern boot. This is proved by an examination of races who wear no boots and whose feet conform in flexibility and appearance to those of a child before its feet are cramped. Both the infant and shoeless adult native can freely abduct the big toe.

The preventive treatment of hallux valgus consists in

developing a heel-and-toe walk with parallel feet, and in wearing anatomically correct shoes.

The mechanical treatment consists in deflecting the body weight from the inner to the outer side of the foot and in relieving the painful joint from pressure and friction.

Operations for the correction of deformity in cases which present no functional debility should not be undertaken lightly, and never unless the patient is prepared to wear appropriate boots.

The choice of operation should be decided by the special circumstances of the case. For mild cases of hallux valgus without symptoms when the deformity can easily be rectified without force, it is sufficient to divide the capsule and reef it to the inner side, divide the extensor proprius hallucis, and remove a flap of skin so that when the edges are approximated it will hold the toe in slight abduction.

Where there is neither pain nor disability, but where the deformity is more extreme and cannot be rectified by manipulation, it may be necessary to expose the joint, divide the tightened structures on the outer side, divide the extensor proprius hallucis, and perform a cuneiform osteotomy on the inner side.

Where the symptoms are entirely referable to the bursa and do not involve the joint, the bursa should be exsected together with the bony prominence below.

A removal of the whole of the metatarsal head with part of the neck should be reserved for those of middle life where osteo-arthritic and periarthritic changes have occurred, the joint looking large and gouty. Unless bone is fully removed in such a case pain and stiffness will remain.

Removal of the head of the metatarsal should be reserved for those extreme cases associated with bunion where the head is rough and painful and the joint tender. It is more suited to the post-athletic age.

When dealing with the young athlete—even in extreme cases—special endeavour should be made to retain as much of the metatarsal as possible in order to maintain the strength of the arch. The incision through bone should be oblique, and a portion of the lower surface of the head left. The structures which hold the bones together should be divided, the bursa and its bony bed should be removed. The toe should be maintained well extended until the wound has healed.

In cases of hallux valgus where the symptoms seem to be maintained by friction of the first phalanx with the metatarsal, exsection of the base of the first phalanx may be sufficient. The arch is thus maintained.

Where symptoms resemble metatarsalgia and pain is referred to the space between the first and second metatarsal heads, an osteophyte is often found attached to the neck on its under surface. This requires removal.

In hallux rigidus the operation of choice is that of the removal of the base of the first phalanx, care being taken to remove sufficient bone.

After each type of operation treatment should be directed to prevent recurrence, and the musculature of the foot should be developed.

The disadvantages of all operations where deformity is excessive and its reduction is effective lies in the fact that the big toe remains too wide apart from the remaining toes, and no boots can be bought to fit the foot. This is due to the increased separation of the first metatarsal from the second. To obviate this deformity I would advise an osteotomy just distal to the *base* of the first metatarsal, and so approximate the first metatarsal to the second. This will materially lessen the deformity. Reidl recommended a wedge osteotomy (with the base inwards) of the internal cuneiform bone, but this is not so effective as a division of the metatarsal. Young of Philadelphia, by an interesting investigation, found that in an appreciable number of cases of hallux valgus a wedge-shaped supernumerary bone is found between the internal cuneiform and the base of the metatarsal. He looks upon this as an etiological factor, and by removing it and keeping the foot in equino-varus the deformity is corrected. This bone is similar to the intermetatarseum described by Dwight. The correction can only take place by the approximation of the heads of the first and second metatarsals. If the abducted toe cannot be easily restored by manipulation further operative measures will be needed.

GENERAL DISCUSSION.

The President (Mr. R. C. ELMSLIE) considered that cramping of the fore part of the foot and the abolition of muscular activity was more important than side pressure. It was necessary, therefore, to re-educate the muscles by massage, etc., and to secure abduction of the great toe. Before any routine operation was performed it was important that the main symptom should be seriously considered. He laid stress on the following operative points: (1) trimming of the exostoses round the head of the metatarsal; (2) excision of the head generally, but preserving the cartilaginous bearing surface on the under side if possible; (3) the rubbing of Horsley's wax into the raw bone; (4) keeping the transverse arch strapped for two months subsequently. Massage and re-education of the rest of the foot followed.

Mr. D. MCCRAE AITKEN (London) said that the manner in which Sir Robert Jones had opened the subject for discussion had been so generous in its breadth of treatment of the many factors associated with the production of hallux valgus that ample openings for further discussion were made. Few, however, would be able to add much to what he had said from the patient's point of view about the practical benefit to be derived from treatment, whether operative or non-operative. From a survey of nearly half a century of practical experience, Sir Robert could speak in a way which left his hearers indebted to him, for he had not been silent about the disappointments, and had always considered the practical service to the patient first of all. He was particularly grateful to the opener for introducing hallux rigidus into the discussion, for he considered hallux rigidus and hallux valgus to be closely related in nature and in etiology; both were intimately associated with, or even directly dependent on, flat-foot, to which reference had been made. Pronounced hallux valgus was perhaps more common in women, who, as a sex, were more addicted to the use of pointed shoes than men; hallux rigidus without much valgus deformity was probably more common in men. The boot factor might therefore help in determining the type of deformity. He thought it would be generally conceded that flattening of both the longitudinal and transverse arches was invariably present in adult patients with hallux rigidus or valgus. The point he proposed to discuss was whether it was a primary etiological factor, for if so the proper alteration of the balance of the shoe must be an essential part of treatment, and the outward deviation of the great toe should not be dealt with as a mere isolated and unrelated deformity.

In children about 11 or 12 years of age with everted or flat feet he occasionally saw an early stage of hallux valgus, and had noted that the skin on the inner aspect of the great toe, as well as that on the inner aspect of the head of the metatarsal, had hard callosities on it, similar to those in more advanced cases. These showed that the child had already adopted the gait referred to in the opening paper as rolling over the inner border of the foot instead of using the plantar aspect of the toe for propulsion. Carrying the weight of the body on the toe in this way put a rotational stress on the joint, causing a sort of wringing of the joint which its ligaments were not constructed to withstand. Joint surfaces would withstand much compression, whether by body weight or by muscular action, and ligaments would tolerate considerable tension in the line of their fibres, but they resented being twisted or stressed in wrong directions, and became inflamed and hyperaemic. He believed that this hyperaemia was the main primary cause of the hypertrophic bone formation along the lines of attachments of the ligaments, the edges of the joint cartilages shared in the hyperaemia, and with continuance of the mechanical irritation the osteo-arthritic changes increased. Pressure of the boot might give rise to a bursa over the osteophytic outgrowth; this was secondary, and might be the patient's chief sorrow. Sometimes there was considerable deviation of the toe without pain and without much outgrowth of bone; he thought that in these cases it would be found that there was little or no twisting of the toe, the body weight being carried pretty fairly on its plantar aspect. If there was a septic "rheumatic" element present in the patient this would

contribute to the pain and irritability of any strained muscle ligament or joint, but in his opinion the essential factor was mechanical strain. Before trying to support this thesis by referring to results of treatment, he briefly referred to the mechanism of the foot in what Sir Robert had referred to as correct heel-and-toe walking with the foot pointing forward. The outer toes carried by the cuboid had but little mobility. The inner three toes were carried by the three cuneiforms which articulated through the scaphoid with the astragalus by a freely movable ball-and-socket joint. The first metatarsal and the great toe could further be abducted and adducted to a considerable extent. This part of the foot could be freely pronated and supinated at the mid-tarsal joint, and was the propulsive element of the foot. In heel-and-toe walking the weight came first on the heel, then along the outer border to the heads of the fourth and fifth toes, and then the mobile inner part of the foot came into play and provided the chief propulsive action, in combination with the calf muscles, and the pressure was taken fairly on the plantar aspect of the foot and toes. When the normal and correct balance of this part of the foot gave way the foot became pronated, the weight was carried too much on the inner border of the foot, twisting stresses were produced in the ligaments of the tarsus, giving rise to pains associated with what was called flat-foot, and when the similar stresses affected the metatarso-phalangeal joint the patient was on the way to hallux rigidus or valgus.

The results of treatment, he thought, supported this view. First, in children with early hallux valgus and callosities on the inner aspect of the foot and great toe, raising the inner side of the heel a little and placing a wedge behind the head of the great toe, and perhaps also the second toe, had the effect first of all of deviating the body weight on to the outer side of the foot and preventing the child from walking on the inner side of the foot. Secondly, the wedge behind the inner part of the foot tempted the child to grip with the inner toes, an action which re-educated the proper propulsive action of this part of the foot. With proper shoeing in this way he had seen early hallux valgus disappear, but this did not always occur. Next, in the advanced case with a painful joint, the stout sole in the boot with a bar behind the tread took the stress of body weight off the toes, relieved the joints, and more particularly the ligaments round the joints, from recurring injury, and so allowed the traumatic inflammation to die down, thus relieving the patient from the symptoms which caused distress. There was, therefore, good ground for insisting that, whether as a curative measure in very early cases, as a palliative treatment in later stages, or as part of the after-care after operative procedure, it was essential that the balance of the boot should be correctly adjusted by the means considered best by the surgeon. With regard to operative attack, he added that in order to expose fully the outer aspect of the head of the first metatarsal (because there was considerable osteophytic outgrowth) he had adopted, on the suggestion of Mr. Bankart, an incision between the first and second toes, completely dislocating the toe to the inner side. This gave a full view of every side of the head of the metatarsal. He did not think he would adopt it as a routine, but only for cases in which a complete clearance between the first and second metatarsal head was essential.

Mr. Naughton Dunn (Birmingham) pointed out that pain was the dominant factor which caused the patient to seek advice. Deformity or rigidity of the great toe was often seen in patients who had no complaint about the functional efficiency of their feet, but if pain was also present they expected relief. If relieved of pain they were satisfied, and any of the reasonable operations which procured this did not seriously interfere with the efficiency of the foot. A patient sometimes came because of pain in the foot; a definite deformity of the great toe might be present, and might be assumed by the patient to be the cause of the pain; unless examination of the foot included careful consideration of other possible sources of pain, the results of operation on the great toe would not satisfy the patient. His own statistics showed that there was some other source of pain in 52 per cent. of the cases in which operation was undertaken for deformity or rigidity of the great toe. The coincident treatment of these sometimes less obvious sources of pain was essential to satisfy the patient. Flat-foot and hammer-toe were as a rule obvious if present, and the presence or absence of pain from metatarsalgia should be carefully investigated. Painful corns on the ends of the toes or on the dorsum of the little toe were also complications of foot deformity which might require appropriate treatment. As regards the great toe joint itself, the consideration of the cause of pain was an essential factor in determining the operative treatment. There were two types of cases. In the first and commonest type the pain was due to pressure. This might be simply boot pressure on a normal metatarsal head, leading to bunion formation, or the pressure might be aggravated by lipping and new bone formation of the head of the metatarsal. In these cases if joint motion was painless the most satisfactory result would be got by removing the bunion and mesial half of the metatarsal head together with any other abnormal bone formation on the other surfaces of the head. The shoe was then made to fit the foot. Pressure on prominent bone was eliminated, convalescence was short, and there was complete relief of pain without diminution of function. Secondly, there was the type of case where joint movement was painful and deformity of the metatarsal head was present. Oblique excision of the metatarsal head from above downwards and forwards was then the operation of choice; enough bone must be removed to allow of easy correction of the deformity, but if possible the section should be made so that the lower surface of the shaft still rested on the sesamoid bones. Sir Robert had mentioned the interposition of a flap in this operation; this he personally considered quite unnecessary; he believed that local fascial and fatty flaps, by the possible inclusion of divided cutaneous nerves, were largely responsible for the painful joint movement which sometimes resulted. In his opinion the essential of the operation was simplicity—a straight rather than a curved incision: a direct incision to bone, exposure and removal of the head, and closure of the wound by a double removable silkworm-gut suture. Where joint motion was painful and there was no alteration of the contour of the metatarsal head, he thought the false joint was better obtained by removal of the proximal half of the proximal phalanx of the great toe. This operation was especially applicable to the cases of persistently painful hallux rigidus in adolescents. It was an operation which should not be undertaken where trimming of the head of the first metatarsal bone was also necessary, as there was risk of ankylosis taking place if two opposing raw bone surfaces were present. Sir Robert had not mentioned the special circumstances in which he would consider removal of the sesamoid bones. In Mr. Dunn's opinion removal of the sesamoids was necessary only in cases where, as a result of their ankylosis to the metatarsal head, painful persistent callosities had developed from pressure. In these cases removal of the sesamoids and the under surface of the head of the metatarsal bone was necessary to give relief.

In summarizing his remarks, he concluded: (1) That 50 per cent. of the cases of hallux valgus and hallux rigidus were complicated by some other disability of the foot. (2) That in many cases of pure hallux valgus and hallux rigidus the cause of pain was boot pressure on prominent bone, and that in these cases removal of the prominent bone was the operation of choice. (3) That where removal of the metatarsal head was practised the interposition of local flaps was unnecessary, and that these were the common cause of the painful, unsound ankylosis which sometimes resulted. (4) That when arthritis was present without deformity of the head of the metatarsal, a better functional result would probably be obtained by removing one half of the proximal phalanx.

Mr. E. Laming Evans (London), dealing with etiology, considered that local sepsis, especially pyorrhoea, was important. This had to be abolished before an operation was performed. He was guided in the amount of bone to be removed by the condition of the soft tissues; if these were infiltrated he removed a greater quantity of bone. When ankylosis occurred after excision, he removed more bone and introduced a free flap, the end of the shaft of the metatarsal

bone being reseated on the sesamoids. In severe cases he advocated amputating the great toe. Muscle re-education was necessary, especially of the extensor longus hallucis.

Mr. P. B. Roth (London) considered that the chief cause of hallux valgus was tight socks and stockings. These were big enough when bought, but were the same shape for right and left feet, and after washing shrank more and more. They were darned and redarned, and became smaller and smaller; they were only thrown away when the darns appeared above the level of the boots or shoes. They distorted all the toes, and pushed the big toe outwards. However well fitting the boots, they would not prevent hallux valgus if the socks and stockings were wrong. Other causes were trauma, heredity, and chronic sepsis. Some years ago he wrote "that the operation of removal of the head of the first metatarsal was so often followed by crippling of the patient for life that he could not think a few successes entitled it to be considered at all." He was led to write this sentence because he had seen several deplorable results of the operation performed by others. But he knew now that he had been wrong, and he took this opportunity of saying so. The deplorable results were due to bad technique or bad after-treatment; the operation properly performed in suitable cases was an admirable one. He had been finally led to this opinion by a pronouncement by Mr. Muirhead Little, who pointed out that there was no anterior transverse arch to the foot as generally understood, and that consequently removing the head of the bone could not interfere with it. He was in entre agreement with this statement. In a slight case he prescribed shoes to measure and shaped to the feet, taking care that the socks or stockings were fully large. He did not use toe posts or springs; he had never found them do any good. In a more serious case, where there was a painful lump, with perhaps a bursa over it, he chiselled off the lump in addition, and tenotomized the extensor proprius hallucis if tight. In a bad case, where there was considerable pain, or a very prominent unsightly lump, or where there were overriding toes, he excised the head of the bone, dividing the neck subperitoneally as close to the head as possible with a pair of bone-cutting forceps. He did not remove the bursa, as he considered that it acted as a useful buffer during convalescence, and prevented the skin from becoming adherent to the bone. Afterwards the bursa, being no longer required, gradually disappeared. After the stitches had been removed the feet were massaged and gently moved each day for a month, and the patient was allowed gradually to get about on them. At the end of two months women were able to wear ordinary ready-made two-inch heeled shoes in perfect comfort, and they could even dance for hours.

Mr. W. Rowley Bristow (London) suggested that Mr. Roth would retract in a year or two his remarks about the transverse arch of the foot, the existence of which he had denied. Mr. Bristow regarded the preservation of the sesamoids as the most important point in the operation on either of these conditions, and thought that cases in which they needed removal must be very few. These structures acted to a great extent as the buffer necessary for the new joint. He agreed with Sir Robert Jones and the President that patients with a mild degree of hallux valgus, and not complaining of pain, were best left alone. For the severe degrees of deformity, when pain was the symptom complained of, in his experience free removal of the first metatarsal head was the operation of choice. Removal of osteophytes, or part of the head, usually resulted in a stiff joint. The other point mentioned in the opening paper, but not stressed, referred to the after-treatment. The patient, after excision, was allowed up in two weeks, a metatarsal bar being worn which prevented weight-bearing and pressure on the new joint. The bar was replaced in a week or two by an anterior arch support made from a plaster cast. As soon as the stitches had been removed massage and electrical stimulation of the intrinsic and extrinsic muscles of the foot were commenced and continued for two weeks. The patient was taught to move the toes and exercise them for himself, and his early efforts at walking were supervised. With free removal of the head and preservation of the sesamoids, followed by appropriate after-treatment, the results were satisfactory, and there was no tendency to recurrence of the hallux valgus deformity.

Dr. G. Holmes (Harrogate) pointed out that occasionally cases of hallux valgus were sent to watering-places diagnosed as gout or osteo-arthritis, and that not infrequently gout or osteo-arthritis was associated with this condition. Treatment by hot paraffin wax or steam baths would in the majority of cases remove the inflammation and pain, and should be followed by massage and re-educative treatment of the muscles. Most patients could be persuaded to wear suitable boots, but it was necessary for the doctor to put them in touch with a competent bootmaker who would provide suitable footwear without the ugliness for which surgical bootmakers were so often responsible.

THE OPERATIVE TREATMENT OF ARTHRITIS DEFORMANS OF THE LARGE JOINTS.

BY

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The term "arthritis deformans" is used as indicating a "progressive non-suppurative disease of joints characterized by pain, swelling, and impairment of function leading eventually to deformities and ankylosis." It appears to be the most convenient term for the purposes of this paper, since it includes types of the disease possibly differing in pathology, and avoids any controversial suggestion as to either pathology or etiology. In the short time at my disposal I wish to give some account of recent experience in the operative treatment of the disease as it has been worked out in a clinic remote from the advantages associated with a teaching hospital. The invaluable help afforded by the writings of leading orthopaedists (many of whom are identified with this Section) has fortunately always been available and constantly laid under contribution.

Operative measures have been undertaken in an attempt to meet one or more of the following indications: (1) To relieve pain. (2) To restore mobility: (*a*) inability to carry out particular movements completely; (*b*) ankylosis. (3) To remedy deformity. (4) To arrest progressive change in the joint, and to hasten resolution by removal of diseased tissue.

The actual operations undertaken may be classified as: (1) extra-articular (manipulation, tenotomy, etc.); (2) arthrotomy, with more or less extensive intra-articular procedures.

The frequent difficulty of fully meeting the indications by extra-articular operation has led me to resort to arthrotomy in an increasing number of cases, and with these latter alone this paper deals. My experience of such operations in cases of arthritis deformans consists of 34 arthrotomies (performed on 28 patients), made up of 12 hip cases (11 patients) and 22 knee cases (17 patients). Of the 12 hips cases 8 were males and 3 females; the youngest was aged 17, the oldest 63—the average age being 43 years. Of the 22 knee cases, 8 were males and 9 females; the youngest patient was 14 years of age, the oldest 66—the average age being 37.

No patient has been submitted to operation who, after a careful clinical examination, did not appear to be a good operative risk; nor has any patient with an obvious focus of infection been operated on until this had been as far as possible eradicated. Many of the patients had previously undergone a very thorough course of vaccine treatment—a procedure upon which some of my colleagues lay the greatest stress, deeming the "absence of response to a large dose of an appropriate vaccine" a sure criterion of the safety of operation. Increasing experience would lead me to avoid operation in the case of a patient whom one judged incapable of a persevering co-operation in the after-treatment, upon which the ultimate result largely depends. The local conditions were in all cases investigated by careful clinical and *x*-ray examination, the latter preferably stereoscopic.

In dealing with this disease I have from the first felt that one ought, whenever possible, to aim at a mobile joint.

so in those cases—the majority of my series—concerned with the treatment of end-results, in which symptoms are caused by deformities the result of disease no longer active or actually at an end, some form of arthroplasty—taking this to mean "the operative mobilization of any stiff joint"—was the operation of choice, arthrodesis being employed only to meet some special indication in two cases (knees). In only two cases (one hip, one knee) was a formal operation with interposition of autogenous fat-fascia membrane carried out; in these the Murphy technique was followed. The remainder were treated by a procedure comparable to that described by Hildebrand as a "remodelling" operation, the main features of which are the removal of diseased and disorganized tissue and the reshaping of the articular surfaces to as near the normal as possible. The details of this method were evolved slowly—the results in early cases undoubtedly suffering because too little was attempted. Throughout I have approached these operations as primarily exploratory in character.

HIP-JOINT.

I have performed 12 arthrotomies of the hip-joint—1 Murphy arthroplasty, 1 excision of head of femur, and 10 remodelling operations.

The joint is exposed by the U-shaped or Murphy "goblet" skin incision with temporary detachment of the great trochanter, care being taken not to jeopardize the blood supply of the flap by inclining the upper limbs of the U too much inwards. A striking feature of the majority of the joints is the contraction and thickening of the capsule, which, far from being "large and somewhat loose so that in every position of the body some portion of it is relaxed," was contracted, so that in every phase of the limited range of movement of which the joint was capable it appeared taut and unyielding. This is, I believe, an important factor in causing limitation of normal movement. Even complete division of this appears to me insufficient in view of the rapidity with which it unites, and I now excise it as completely as possible, the ease with which a new "capsule" can be formed being well recognized. After the capsule is divided and any bony adherence chiselled through, the head of the femur is dislocated out of the acetabulum, and the condition of the articular surfaces inspected. Bony adherence involved the whole articular surface in only one case, and this was treated by a Murphy arthroplasty; in two cases it occurred over a limited area, and in these I relied upon Horsley's wax rubbed into the resulting raw surfaces to prevent re-adherence. The few observations I have been able to make lead me to think this a trustworthy method. In most of my cases the ligamentum teres had disappeared. Osteophytic outgrowths from either the acetabular rim or femoral head are chiselled off; in one case great difficulty was experienced from finding the cotyloid ligament completely ossified—usually it is the head of the femur mushroomed out and misshapen which demands most attention. In my early cases I did not remove the bone sufficiently freely. Curved chisels of varying width are of great use in carrying out this part of the operation, as are also the special instruments devised by Murphy. Resulting raw bony surfaces are made smooth by filing, or the use of a burr and Horsley's wax thoroughly rubbed in. Diseased cartilage is removed, areas of necrosed or carious bone are curetted, and the resulting cavities made as smooth as possible with Horsley's wax, or, if large and of suitable shape, filled with bipped fragments of the patient's fat. Redundant or diseased synovial membrane is clipped away—an insignificant feature of the hips I have seen. Only once was a loose body found. The femoral head is replaced and the range of movement in all directions noted. Further remodelling takes place if necessary. Certain muscles or tendons (notably the adductor longus) may need division. When refixing the great trochanter the mechanical advantage of so doing at a lower level (as pointed out by Whitman and Platt) should be remembered.

The limb is abducted as far as possible, and this position maintained during the early weeks of convalescence. I have not always employed extension. Passive movements are begun as early as the condition of the patient and the wound permit. I have usually given an anaesthetic the first time this is attempted.

KNEE-JOINT.

I have done 22 arthrotomies of the knee-joint, as follows: 1 Murphy arthroplasty, 2 arthrodeses, 14 remodelling operations, and 5 synovectomies. Two patients had both knees operated upon and three had one knee opened a second time.

The joint is approached by a long curved anterior incision, the patella being either split vertically or turned up after division of its tendon or detachment of the tibial tubercle. In incising the capsule due regard must be paid to the integrity of the lateral ligaments. Flexion of the joint after division of any bony adherence of the femur to either patella or tibia gives a good view of the interior. Degenerated or proliferated synovial membrane, softened or ulcerated cartilage, and vascular granulation tissue are carefully dissected away, any softened or necrosed bone curetted or chiselled out, osteophytes growing at the articular margins removed, the resulting raw surfaces being filed smooth and thoroughly rubbed with Horsley's wax. Loose bodies are sought for and removed. Any contracted tendons which prevent full extension must be divided. Three of the knee-joints in my series were opened in a comparatively early stage of monarticular arthritis with the idea of cutting it short by removing diseased tissue. Little bony or cartilaginous change was present, and the operation consisted of a synovectomy as complete as the exposure permitted.

After operation the leg is put up straight; at first without extension. Passive movements are begun early and persevered with, massage and active movements following as soon as the wound permits. A few cases have been fitted during convalescence with the Ernst ambulatory splint.

RESULTS.

The only death in the series took place after a "remodelling" hip operation, the patient succumbing to alcoholic delirium on the ninth day. There was no wound sepsis. The upper limits of the U-shaped wound in one or two cases of both hip and knee showed a limited aseptic sloughing of the edge of the flap, due to interference with the blood supply—a fact which determined my preference for a straight incision. No patient suffered from shock sufficient to cause anxiety or to call for any special treatment, with the exception of one female patient aged 58, who, after a hip operation, needed continuous rectal saline during the night following the operation. In only one case where pain was an indication for operation was there failure to cure it—a hip operation in a man of 47, where a second arthrotomy had to be undertaken before this symptom was relieved. This patient developed during the first convalescence a sharp attack of acute polyarthritis with high temperature, the remodelled joint being affected in addition to most of the other large joints—the only example of a post-operative "flare-up" I have encountered.

In nearly all the hip cases the freedom of movement which at first resulted tended gradually to diminish as time went on. Briefly, I should say that of the 10 "remodelling" hip operations the resulting mobility was good in 1, fair in 7, and bad in 2. The functional result of the Murphy arthroplasty was bad. The knee operations have given on the whole better results in this respect than the hip, many of them presenting painless flexion to a right angle a sufficiently long time after operation to justify the belief that such improvement will be permanent. In two of the three cases of synovectomy the result leaves little to be desired, a result attained in one case only after a second and more thorough operation. The third, also operated on twice, gave a positive reaction for tubercle after animal inoculation (the microscopic examination being equivocal), and was therefore subsequently kept fixed. The two cases of arthrodesis of the knee were satisfactory, but the Murphy arthroplasty of this joint gave but a fair result. The "remodelling" operations from the point of view of mobility can be classed thus: good 7, fair 3, bad 2. In two cases the operation was too recent to judge.

CONCLUSIONS.

1. These operations were undertaken for patients many of whom, in spite of years of medical and spa treatment, were hopelessly crippled.

2. The results as far as the relief of pain is concerned were almost uniformly good, and in many cases there resulted a mobility beyond expectation in joints the stability and weight-bearing powers of which were excellent.

3. In common with other observers I have found that results which were disappointing to the surgeon appeared to give satisfaction to the patient.

Dr. Warren Crowe (Harrogate) gave details of two patients operated on by Mr. Frankling. He insisted that patients for operative treatment ought to be able to take large doses of vaccine without any reaction occurring: it was then much safer to operate.

PROBLEMS IN THE TREATMENT OF ACUTE ARTHRITIS OF THE HIP.

BY

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The major problem in the treatment of acute arthritis of the hip is that of life saving. This aspect of the case, however, will not be discussed further than to mention a recent method which seems to me to show some promise of success, not only in the disease under discussion, but also in the case of acute infections generally. I refer to blood transfusion.

Acute arthritis of the hip is a general blood infection. The micro-organisms are virulent or, what amounts to the same thing, the resistance of the patient is low. The disease is often fulminant in its rapidity. Medicinal measures which take time are therefore discounted. Surgical measures are difficult for anatomical reasons, and the mortality is therefore high. The urgent demand of the patient is for specific antibodies, but it is hopeless in many cases to expect these to be manufactured by the affected person. Wright has suggested the immunization of a suitable donor, and the transference of about 500 c.cm. of pure defibrinated blood to the affected person. Although I cannot quote a case of acute arthritis of the hip in which this treatment has been successful, I have had one of acute arthritis of the knee in which a very anxious and apparently hopeless case was transformed within a few hours into a cheery convalescent, the phenomena, both subjective and objective, being exactly comparable to what one sees occur in the crisis of an acute pneumonia.

With the above exception I have purposely avoided discussion of the early circumstances of the disease, such as the nature of the infection, the site of its origin within the joint, and the direction of its spread from this site, these being beyond the purpose of the paper. Nor shall I discuss the difficulties arising from the presence of acute suppuration in a narrow space, far from the surface, nor the methods which are at present adopted for securing relief of tension and free drainage. It is rather to the sequelae of the disease that I wish to direct attention. It will be admitted, of course, that, just as in cases of severe poliomyelitis, if orthopaedic principles have been observed during the acute stage, later difficulties will be materially mitigated. Later problems, however, do present themselves, and it is of these that I wish to speak. The patient has succeeded in weathering the first storm, but has been left with a limb already damaged, and is running the risk of becoming worse, until a functionless and often painful lower extremity remains. Let me state, at the outset, that I regard the influence of age as the vital factor from the standpoint of morbid anatomy, and a recognition of this must to a large extent determine treatment. My interest in this problem was first aroused by a case which came under my care in 1917 with an acute infection occurring a few weeks after birth and involving the whole of the left lower quarter. It was not at the moment, I regret to say, recognized as a case of acute arthritis of the hip, this fact being discovered only after the acute symptoms had subsided and when an *x*-ray photograph was obtained. By this time the child, a boy, was just over one year old. He was beginning to stand up, and the left limb was noticed to be in a position of flexion, adduction, and considerably shortened.

A search into the literature disclosed the fact that as long ago as 1874 Thomas Smith of St. Bartholomew's Hospital had accurately and exhaustively described as a definite clinical entity the acute arthritis of infants, specifying the main characteristics as follows:

1. *Age.*—Within the first year, often within the first few weeks or first few days of birth.
2. *Onset.*—Sudden, often preceded by traumatism. In one case cited by him a woman with puerperal mania swung her child out of a window by the arm, the shoulder being affected subsequently.
3. *Progress.*—Rapid, to suppuration, limited to the epiphysis and the joint cavity. The diaphysis always escapes.
4. Involvement of *large joints*—hip, shoulder, knee, etc.
5. Complete *destruction* of the whole epiphysis, leading to shortened, mobile, or flail joints.
6. *Termination.*—Rapid, either favourable or fatal. Thirteen out of twenty-two cases in Smith's series were fatal.
7. Neither syphilis nor tubercle are *causal agents.*

Smith's article makes, of course, no reference to the bacteriology except in so far as clinically he excludes both syphilis and tubercle. In this case the cause was demonstrated: it was due to *M. tetragenus.* Traumatism at birth was also a probable factor.

Consideration of the morbid anatomy of the upper end of the femur of the infant as disclosed by *x*-ray examination affords a clear explanation of these clinical manifestations. The head of the femur, being almost entirely composed of cartilage in infancy, is destroyed by the inflammation and suppuration, and the epiphysis rapidly disappears. This occurred in the case under discussion; the problem then presenting itself was clear-cut and definite—namely, how best to treat a heavy and vigorous child of 15 months in whom there was a complete loss of the head of the femur. The indications for treatment at the time seemed to be: (1) against all operative interference; (2) to correct the deformity already present; this was done by forcible abduction and encasing in plaster-of-Paris for a short time; and then (3) to fit such an appliance as, whilst limiting the tendency of the femur to slip upwards, would allow of as much exercise of function as possible.

In the absence of function it was clear that growth of the limb would be stunted, and the general deformity not only persist but increase. Having removed the plaster-of-Paris a calliper splint was fitted, and for about two years this was used. At the end of that time a knee-joint was introduced into the continuity of the side-irons. I am not sure if the latter was judicious in the circumstances. The boy himself is perfectly happy. He gets about with ease, he stands and falls like other children, and to all intents and purposes is a strong and healthy lad. He has at present three inches of shortening made up by a high heel, and he has developed some adduction which increases the effect of the shortening.

Such, then, is the problem presented by an acute arthritis of the hip in infancy—a problem due to the early and complete absorption of the femoral head.

The next problem is exemplified by the case of a girl somewhat older, aged 5 years. At this age the head of the femur is mainly osseous, but not entirely so. After ordinary treatment had been applied for a time and there was still a discharging sinus in the thigh, the child presented herself at hospital. Separation of the head from the shaft of the femur was then found, a considerable portion of the neck having been absorbed; there was also some periostitis in the upper part of the shaft. Careful inspection of the *x*-ray photograph, however, revealed a certain amount of continuity in the bony structure of the neck, and it was therefore deemed advisable to foster this bony bridge in the hope that ultimately a neck would regenerate and so form a communication, however irregular and ragged, between the head of the bone and the great trochanter. For a considerable time, therefore, the child was kept in hospital on an abduction frame with moderate extension. Later still a calliper splint was applied and the child allowed to get about, in the hope that use of the limb would promote bone formation. Unfortunately, at this stage the child went

home to the country and discarded the splint, an act which terminated for the time being, if not, indeed, for all time, the continuity of bone between the shaft and the femoral head. Very little shortening has yet occurred and there is still a continuity of bone from shaft to head, which, however, is considerably deformed as the result of absorption. The problem here is again a very definite one—namely, how to deal with a breach of continuity, partial or complete, in the femoral neck. I suggest in this that the object of treatment is, first of all, to promote reproduction of bone whilst preventing further shortening. Success in this objective will leave a strut to the shaft, and will eliminate the possibility of the great trochanter slipping upwards upon the ilium. The child has therefore been returned to her frame with extension and gradually abducted. Treatment is, of course, not yet completed. There is still risk of the trochanter slipping upwards, but when the splint was removed it did not do so, and it seems to me likely that an ankylosis in good position will be the ultimate result. Treatment has, however, failed to secure mobility.

The third orthopaedic problem is found in a girl older still, about 11 years of age when she came under treatment. In this case the history, briefly stated, is as follows. The child developed influenza in 1918, and following it an acute arthritis of the knee; later still, an acute arthritis of the ankle. These joints were treated by incision, the knee without drainage and the ankle with drainage. The child did not, at this time, complain of the hip at all, but she was extremely ill and almost incapable of saying where she felt pain. A year later, when I saw her, it was discovered that she then had a dislocation of the hip. *X* rays revealed this to be a pathological dislocation due to acute arthritis of the hip. The patient presented herself with the usual deformities—flexion, adduction, slight external rotation of the hip. She walked with the aid of a crutch. The knee was, at this stage, freely movable, but there was some ankylosis of the ankle in the position of equinus. Subcutaneous tenotomy of the adductors allowed reposition of the head, and the hip was put in plaster in slight abduction. After three months a walking calliper was fitted. The hip-joint is placed slightly above the normal level, is mobile, stable, and capable of good function and painless. Here again was a definite and clear problem. A dislocation of the upper end of the femur, the femoral head itself to all intents and purposes undestroyed so far as stability and mobility were concerned, but associated with it the absence or softening of the upper lip of the acetabulum. The condition of the bone in this case accounted for its resistance to infection, and no doubt this resistance was materially assisted by the softening of the acetabulum and the dislocation of the joint which followed. The calliper after being worn for four years has been discarded. The hip-joint is painless, mobile, and stable, the only disability being a slight limp.

The last problem to which I would direct your attention is that presented by an acute arthritis of the hip in an adult, a man, complicated as it so often is by a pathological dislocation. In the adult one is dealing with a femoral head still more resistant to the influence of inflammation and infection, and, except in those cases in which the inflammation begins as a definite osteitis, very little destruction of the head is to be expected, the brunt of the disease being borne by the acetabulum, whose upper lip yields and allows the head to escape upon the dorsum ilii. By the time healing has occurred there has usually been so much shortening of the ligaments and capsule of the joint and so much inflammatory material filling up the acetabulum as to make reposition and replacement impossible. Some operation will have to be done, therefore, if the limb is to become painless and capable of the functions of support and progression.

In the treatment of these cases the requirements of the hip-joint are, I take it, (1) freedom from pain; (2) stability; (3) mobility. This is their order of comparative importance unless the patient sits at his work—for example, if he is a shoemaker, or if the knee on the same side or the hip on the opposite side is already ankylosed. In the case under discussion the man was a small shopkeeper, and it was therefore decided to aim at ankylosis. Through a Smith-Peterson incision the front of the acetabulum was exposed and its upper margin gouged free of cartilage. The shaft of the femur was then divided close to the neck and the upper end of the shaft brought into contact with the ilium by abducting the leg. A slice of the great trochanter was removed, but otherwise the upper fragment was left *in situ*. The result is a firm bony ankylosis with a limb 2½ inches short. This shortening might have been diminished by more abduction. The limb is painless, stable, and strong. The man is able to stand upon it practically the whole day, although it is but six months after his operation.

I do not, of course, claim that these few cases exhaust the problems which follow acute arthritis of the hip, but they do illustrate one aspect of this somewhat difficult subject.

DISCUSSION.

Sir ROBERT JONES opened the discussion, pointing out that pathological dislocation of the hip in children could sometimes be easily reduced. Mr. MCCRAE AITKEN described his operative procedures in detail. The PRESIDENT urged the early application of orthopaedic principles. Mr. PLATT had found the thick capsule an obstruction to reduction in the acute arthritis of infants.

LESIONS OF THE ULNAR NERVE IN THE REGION OF THE ELBOW.

Mr. HARRY PLATT (Manchester) presented some observations on the pathogenesis, prognosis, and treatment of certain special types of ulnar nerve lesion in the region of the elbow. He divided these into three classes:

1. Nerve lesions associated with recent fractures of the lower end of the humerus.
2. Late involvement of the ulnar nerve.
3. Recurring dislocations of the ulnar nerve.

He pointed out that the lesions in the first group were comparatively rare, and usually formed a transitory complication of the fracture, but occasionally a severe neuritis persisted. He had himself encountered 8 ulnar nerve lesions in 187 consecutive fractures of the lower end of the humerus. In one case only did the symptoms of severe nerve-block persist after a period of six months. This case was treated by operation and the nerve trunk displaced to the front of the elbow, a procedure which was followed by rapid regeneration and recovery of function.

Late involvement of the ulnar nerve was a well recognized clinical entity with a characteristic picture, including a definite sequence of events—namely: (*a*) a fracture of the lower end of the humerus in early childhood; (*b*) a latent period, which might be as much as fifty years; (*c*) the spontaneous development of an ulnar neuritis. Various types of operation had been carried out for this disability, but it was now realized that the most logical and effective procedure was anterior transposition of the nerve trunk.

Recurring dislocation of the ulnar nerve was a condition in which the exact etiology still remained somewhat obscure. The signs of neuritis of the ulnar nerve which developed in these cases demanded operative treatment, and again the operation of anterior transposition was indicated.

CLINICAL DEMONSTRATION.

In the afternoon a clinical demonstration was held in Mr. Basil Hall's nursing home.

Mr. S. W. DAW (Leeds) showed the following cases: (1) myeloma of the femur treated by resection and bone grafting; (2) calcaneo-cavus; (3) five cases of spinal caries treated by bone grafting; in one of these a psoas abscess had occurred without distributing the grafts; (4) tendon transplantation in a case of old hemiplegia; and (5) four cases of spastic diplegia.

Mr. F. W. GOYDER (Bradford) showed two cases of transplantation of the tibialis anticus into the perineal muscles, and one case of transplantation of the flexor carpi ulnaris into a loop formed from the palmaris longus.

SECTION OF OPHTHALMOLOGY.

A. Maitland Ramsay, M.D., F.R.F.P.S., President.

DISCUSSION ON THE INTRACAPSULAR METHOD OF CATARACT EXTRACTION.

OPENING PAPERS.

I.—Professor IGNACIO BARRAQUER,
Barcelona.

By a correct cataract extraction we mean the removal of the whole cataract without producing any mutilation or ectopia in the intraocular organs. The classical operation by cystotomy is an extraordinarily imperfect operation from a surgical point of view. Its principal defects are as follows:

1. The necessity of making pressure on the eyeball with little spoons or with the fingers on the lids to obtain expulsion of the lens predisposes to vitreous loss.
2. The entrance of different instruments (spoons, knives) into the anterior and posterior chambers to remove the remains of the lens from the eye, traumatizing the iris and favouring iritis.
3. The retention in the eye of the greater part of the lens capsule and the remains of the lens cortex; these are the cause of incarcerations, iritis, iridocyclitis, later plastic iridocyclitis, secondary glaucoma, etc.

To avoid all pressure on the eyeball, to avoid the entrance of unnecessary instruments into its chambers, and to remove the lens entirely within its capsule, is the only way to get rid of all those complications.

Many methods of intracapsular extraction have been practised since 1745, or since the time of Daviel, in order to obtain an ideal removal of the lens. Studying those different methods of intracapsular extraction, we can assemble them into two large groups—those that remove the cataract by traction and those that expel it by pressure on the eyeball. Among the first group, the more commonly performed are those of Kalt and Knapp, and yet their methods do not become popular, because in the greater number of cases the instruments employed for the traction of the lens break the capsule, and the operation often becomes an ordinary cystotomy with all its inconveniences, aggravated by the complications caused by severe traction on the zonule.

Among the operative procedures of the second group, the only one really worthy of mention is the operation of Smith, who by his clever technique, and by the brilliant successes obtained in many thousands of cases, has demonstrated in a clear manner the great advantages of the intracapsular extraction. Nevertheless, its performance by hands not so expert as his is often accompanied by vitreous loss and other accidents that spoil the success of a great number of operations.

In 1916 I arrived at the idea of the construction of a pneumatic forceps (cup) that would grasp the lens by its anterior face, and without breaking its capsule, by stretching, would detach it from its attachments and pull it out entirely. Although in my first trials I successfully obtained intracapsular extraction, complications in the ciliary region made my statistics bad. Histological examinations of operated eyes and lenses, and preparations and experiments on dead eyes, enabled me to corroborate that the traction on the lens most frequently caused rupture of the fibres of the zonule at their ciliary attachment, causing haemorrhages and inflammation in this region. To avoid this inflammation it was necessary to disjoint the zonule from the lens by its lens insertions. This I secured after several changes in the shape of the cup and by giving a vibratory movement in the vacuum, which was carefully studied by Professor Gallemaerts of Brussels in July, 1922. With this apparatus one obtains a nearly instantaneous diminution in the maximum diameter of the lens, and the vibrations not being sufficiently strong to be transmitted the full length of the zonular fibres to their peripheral insertion, the fibres give way close to the lens and so avoid the harmful traction on the ciliary region.

At first I practised extraction combined with a large iridectomy, but I was very soon convinced that the defect in the pupillary sphincter was not only unnecessary but harmful, because it predisposed to incarcerations with all their ill consequences—iridocyclitis, secondary glaucoma, and so on—and when I practised my operations without iridectomy prolapse of the iris was a complication that sometimes spoiled their success. The Hess peripheral iridectomy and the application of sutures in the flap improved my operation very much, although annoying vitreous ruptures sometimes occurred. By training my assistants in the manner of holding the lids, avoiding the least pressure on the eyeball during all the operative steps, and by paralysing the orbicularis by means of an injection of novocain according to the technique of Van Lint-Villard, this complication also disappeared.

My erisiphaque is in reality a zonulotome and a pneumatic forceps, because when grasping the lens and deforming it it immediately brings about rupture of the zonular fibres, and afterwards the operator, in withdrawing the instrument from the anterior chamber of the eye, drags along with it, as if in forceps, the cataract entirely separated from its attachment. As it is necessary to obtain a certain amount of deformation of the cataract in order to secure rupture of the zonular fibres at their attachment to the lens, and the solidity and elasticity of the lens being different in every case, it is necessary to determine the physical condition of the lens in order that the strength of the vacuum and the number of vibrations necessary to procure separation of the suspensory attachment without rupture of the capsule may be arrived at. The greater the hardness of the lens, the greater must be the intensity of the vacuum.

In withdrawing the instrument with the cataract attached, a movement of rotation must be made in such a way that while the upper border of the lens follows the concavity of the patellar fossa, without exercising any pressure on the vitreous or altering its shape, the posterior surface of the lens becomes anterior and its lower border is brought upwards across the pupil and out between the edges of the flap.

I need not explain the special way in which I prepare my patients, the details of the technique of my method, nor the post-operative treatment, because I have published it several times, and probably all of you know it, and I need only repeat that to get the good results I have obtained during these last years it is indispensable—

(1) To prepare the patient beforehand as regards his general condition.
(2) To make a careful study by means of the Gullstrand slit-lamp and microscope of the physical conditions of the cataract.
(3) To be sure of the perfect sterilization of the eye to be operated on.
(4) To employ the previous suture of the flap.
(5) To operate with a perfect erisiphaque, well regulated beforehand with reference to the physical conditions of the cataract on which we are going to operate.
(6) Surely the most important point of the operation: to avoid always all pressure on the eyeball, either with lid retractors or with fixation forceps, in cutting the flap, in making the extraction, and afterwards when one ties the sutures and puts on the bandage. Very little pressure causes rupture of the hyaloid, which, if not followed by loss of vitreous, at least allows that humour to enter the anterior chamber, and so brings about failure of what we attempted—namely, not to produce any intraocular disturbance.
(7) We must never divide, except in a few cases, the iris sphincter, and the very thin post-operative bandage must be left untouched for several days after the operation, the absence of intraocular inflammation making unnecessary the dressings that are always harmful.

I can assure you that when I operate in my clinic under my ordinary conditions there are very few patients with senile cataract who do not have a black, central, and round pupil and with more than 8/10 of vision ten days after the operation. It is in patients with symptomatic, diabetic, and myopic cataracts that the best results are obtained, as compared with those who have undergone capsulotomy. The reduction of the number of vitreous ruptures and the

absence of iritis ensure a large percentage of successes. I have practised cataract extraction by capsulotomy for sixteen years and by phacoeresis for eight years, and during the latter period the percentage of patients with normal visual acuity is more than double that in the former one, and the number of operative accidents and post-operative complications has diminished in the same way.

My operative technique is not difficult—it is only completely different from other cataract operations. Any ophthalmologist who can operate correctly on ten successive cataracts, and who knows practically the normal anatomy of the eye and the pathological anatomy of post-operative complications of cataract extraction, is able to learn rapidly the phacoeresis technique. This is demonstrated by the new statistics published by Drs. Basterra of Madrid, Saint-Martin of Toulouse, Guiral of Habana, Green of San Francisco, and others.

Whenever we do not obtain a black, central, and round pupil and more than 8/10 vision, it means that the cataract was not of the simple senile type, or that at the time of the operation either the operator or the patient was at fault.

II.—A. H. H. SINCLAIR, M.D., F.R.C.S.EDIN.,
Ophthalmic Surgeon, Royal Infirmary, Edinburgh.

A PRELIMINARY NOTE ON THE INTRACAPSULAR EXTRACTION OF CATARACT WITH SPECIALLY DESIGNED FORCEPS.

I WISH, in the first place, to thank your Committee for the honour of their invitation which affords me the privilege of taking part in this discussion.

The subject of intracapsular removal of cataract has been widely known for many years. Colonel Henry Smith, who is present to-day, read a paper before this Association in 1903, and at that time had already had an experience of 6,000 cases in India. His method of operating by expression is well known, and many ophthalmic surgeons visited his clinic, among others Dr. Arnold Knapp of New York in 1911. Dr. Knapp in the following year began his work in intracapsular extraction. His subsequent writings have sufficiently indicated his method of procedure with blunt forceps (Kalt's) and expression. Professor Barraquer, to whose interesting address we have listened this morning, developed, in 1916, his new instrument, which he has called the erisiphaque, and with which he has operated in many parts of the world.

The method of intracapsular extraction, of which I have now had some little exeperience, is performed with forceps. I have not had a large number of cases so far, and still hope that both technique and instruments may be further developed and improved with increased experience. I will not discuss the conditions of general health, or that of neighbouring mucous membranes and teeth, which we know require careful scrutiny and often special attention before operation is undertaken. It may be taken for granted that prior to operation every possible care has been taken to ascertain by all methods at our disposal that the eye and its surroundings comply with the strict requirements of aseptic surgery. The state of the eye with regard to functional reactions is tested carefully in the usual way. The condition of the lens is examined with the pupil dilated by focal illumination, with the opthalmoscope, and with the corneal microscope two or three days prior to operation. The type of cataract and the stage of advance are carefully investigated, but, so far as I am concerned, not as yet with sufficient certainty in the interpretation of appearances.

The forceps are blunt or toothless. The lower margins of the blades, which come into apposition when the instrument is closed, have a specially designed curve, are smooth, and meet in a clamp-like manner. The shanks of the forceps do not meet, and all projecting parts are carefully rounded off so as to cause no injury to the cornea or iris. The correct apposition of the blade margins is insured by "stops" on the handles, and too great pressure is prevented by an adjustable nut on one of the stops. The upper aspect of the closed blades forms a small spoon-shaped or boat-shaped cavity or cup. This is directed upwards when the instrument is in position, and can be clearly seen through the cornea. The lower aspect of the closed blades is convex and keel-like, and, when the instrument is first placed in position, rests lightly upon the central part of the anterior capsule of the lens. This forceps, which I have had in use in its present form for some time, was modified from a pair of Kalt's forceps which I purchased in New York in 1920; it has been modified in size, in shape, and in action. Recently I have found that the capsule of the lens seldom gives way where the forceps take hold, and I believe this is in part due to the construction of the instrument.

Hitherto I have always performed iridectomy, and immediately after iridectomy the forceps are used. The blades are introduced closed through the central part of the incision, with the point tilted downwards, so as to raise the edge of the corneal flap. As soon as the closed blades reach a position at, or a little beyond, the centre of the lens, they are placed, still closed, lightly on the lens capsule and opened widely to 4 or 5 mm. During the opening movement the blades are held in light contact with the surface of the lens. The pupil margins, which I have often seen in contact with the outer aspect of the blades, are gently pressed asunder, and I have never seen the iris injured in any way or caught by the forceps. When the opening movement of the blades ceases, the closing movement should begin without any delay, and as this closing movement begins the blades are gently pressed against the lens capsule. This gentle pressure is increased as the closure proceeds, so that the convex edges of the clamping margins of the blades dimple or indent the capsule into the soft subcapsular cortex of the lens. As the closing blades approximate, the pressure upon the lens is progressively increased, and at this stage it can be clearly seen through the cornea that a relatively large mound of capsule-covered cortex is forming between the blades. When the closure is complete, the cup of the forceps contains quite a considerable mass of capsule-covered cortex. This contained cortex distends the portion of capsule within the cup and, during the traction which follows, prevents it slipping from between the lower margins of the blades, and thus too great pinching pressure upon the capsule is unnecessary. The construction and large size of the blades also helps to spread or distribute the strain upon the capsule. Note that the degree of approximation or pressure of the blade margins has been arranged prior to the operation by the setting of the adjustable nut on the lowest stop between the handles.

Immediately the forceps have been completely closed a gentle forward movement towards the centre of the cornea is made, and the forceps held forward in this position for an appreciable period—say, for five seconds or more. This first forward movement puts the lens capsule on the stretch all round, and begins the moulding of the lens. When this forward movement is considered sufficient, the direction of traction is altered so as to bring the greatest degree of tension to bear upon one part of the suspensory ligament at a time. If we suppose the cornea to be marked like a clock face as viewed from the front, I should begin the lateral traction forwards and to the side, towards 2 o'clock, and afterwards towards 10 o'clock, and then towards 12 o'clock, always maintaining a partially forward movement. The suspensory ligament appears to give way at one part at a time, and always below the horizontal meridian. Once the rupture of the ligament has begun the subsequent separation is much easier, and the ligament seems to strip off from the lens margin. In cases where the zonule gives way easily, the above stages of the procedure may not be noticeable. At this stage—which is often about half a minute, but has varied from 10 to 15 seconds in one case to from 60 to 70 seconds in another — the lens begins to yield and to come forward at the lower part. This gives the impression that the lens has become free from its lower and lower lateral attachments. The forceps traction is constantly maintained, but with a little less strength, so as to bring the lens forwards and towards the wound very slowly. This slow, gentle, but continuous traction, which I have found best, gives time for the separation of the remaining suspensory ligament attachments, and also for the gentle and slow separation of the lens from its bed upon the anterior surface of the vitreous humour. At this point, where the retaining power of the suspensory ligament has largely given way, the lens begins to abut upon the

posterior surface of the corneal flap, and then on the margins of the wound. It has now become considerably altered in shape, this varying in degree according to the consistency of the lens, which in its turn deepnds upon the type of cataract and the age of the patient. In certain cases it is remarkable to see how much of the intact capsule with contained cortex may be drawn, like the narrow end of a pear, into and even through the wound, prior to the successful delivery of the lens. The moulding of the lens in some instances suggests that the nucleus has altered its position in relation to the surrounding cortex. While this shows the toughness of the capsule and the suitability of the forceps, it is not desirable if due to a preventable cause, such as too small an incision. The lens having engaged in the wound, is slowly drawn through, but must be so held that when its maximum diameter has passed out it can be restrained from anything like a sudden, or even too rapid, a completion of its exit. This is, I believe, important, because it is one of the manœuvres which helps to prevent vitreous from following the lens into the wound. If the last third or quarter of the lens be held in the wound for a few seconds it appears to be finally pushed away by the resiliency of the corneal flap, which closes down behind it.

After the extraction has been completed and the conjunctival flap has passed into good position, as practically always happens, there comes the question of the freedom of the iris from the wound. I have always felt reluctant to introduce a repositor, and have found that stroking of the cornea may suffice, but if necessary the repositor must be used. Atropine, if not used prior to operation, should be used immediately after.

The dressing I use is a small round piece of lint smeared with vaseline and placed over the closed eyelids. A round of Gamgee tissue is put over this, and fixed with a strip of half-inch plaster. Then over all is placed a perforated aluminium shield which is held in position by two strips of plaster. Both eyes are covered for twenty-four hours, after which the unoperated eye is left open and the operated eye has the dressing removed, leaving the shield only. I use the shield with straps of plaster in preference to a bandage round the head, as I find it steadier, and it is not liable to tugging from movements of the patient's head on the pillow.

GENERAL DISCUSSION.

Lieut.-Colonel Henry Smith, I.M.S., said that this was a discussion of the different methods of intracapsular extraction of cataract and, presumably, of the relative merits of this proceeding compared with the capsulotomy operation. He would draw attention as briefly as possible to certain issues on the importance of which enough stress was not laid.

Control of the Eyelids.—Thorough control of the orbicularis, whether by novocain or by mechanical means, or by both when novocain failed, as it not infrequently did, was absolutely essential if the operator was to have a fair chance.

The Incision.—For an intracapsular operation the incision should be 180 degrees, commencing in or just behind the sclero-cornea. If accidents turned it into a capsulotomy operation no harm was done: one never regretted having room enough, but always regretted having too little. Bursting of the capsule in expression was almost always due to too small a wound, and generally due to the same cause in the traction form of extraction.

The Stanculeanu, Kalt, Knapp, and Sinclair methods were substantially the same. They would, he considered, be all improved if the operator made traction with one hand and pressed a squint hook on the flat—the point directed upwards—on the lower third of the cornea to assist in dislocating the lens. Dr. Barraquer's method would, he thought, be improved by using the squint hook in the same way. This would also render the capsule less liable to tear in all these cases. Dr. Barraquer still laid stress on not tearing the suspensory ligament some distance from the lens: to do so would undoubtedly imply more force than was justifiable. Having repeatedly examined lenses for this very thing with a magnifying lens before Dr. Barraquer commenced intracapsular extraction, he had never once found tags of suspensory ligament attached to the lens. He did not think that the zonule was ever thus torn whatever method was adopted. The detachment was always directly from the lens, so that they need have no fear on this issue; vibratory movement had nothing whatever to do with it. There seemed to be a general demand for a less complicated instrument than Dr. Barraquer's, and Messrs. Down Brothers were likely to supply it in the near future.

The Physical Condition of the Lens.—Too much stress was laid on this issue. From the practical point of view it was either a hard cataract or a Morgagnian cataract; if the former the plain of the iris was pushed forward, if Morgagnian it was the most ideal for the capsulotomy operation, or for the procedure which he had long advocated—the least favourable for any of the other methods of intracapsular extraction. Though the lens was a globe in which the different countries of the world could be made out, like Dromio's wife, these things, however interesting, did not help the operator, and the idea that the younger men must investigate every cataract and draw inferences bearing on operation by the newest methods of examining the lens rather tended to frighten him unnecessarily. The younger men in later years would surely come to agree with him that they were taught a thousand-and-one terrors, which seemed after events bogies designed apparently to make sure that they would never draw blood and never acquire enough confidence to operate.

Escape of Vitreous.—People talked as though escape were not incidental to the old operation. Professor Parker of Detroit read a paper at the annual meeting of the American Medical Association in 1921, giving about 14 per cent. in his experience of about 1,400. It was much more serious in the old operation on account of the lens matter and capsule left behind than in the intracapsular operation. A large escape was as fatal as a choroidal haemorrhage: a small escape was of no consequence. Nature was unable to repair the large one, but was able to repair the small one; this was the only explanation why eyes with a small escape wore as well as those with no escape.

People seemed to swallow the conclusion that pressure and friction must do harm; therefore it did do harm; they drew a conclusion from one premise instead of two, and advanced no facts. The epithelial surface of the cornea would stand a surprising amount of friction without showing signs of reaction, and considerable pressure and pressure-strain was well tolerated and need not be feared, always provided reasonable skill was used. He had frequently extracted in capsulo down to 30 years of age, and a few times down to 25 without any sinister result. No one operating on patients over 50 years of age would have to use half this amount of pressure-strain.

Reference had been made to Dr. Barraquer's cases in America. Lieut.-Colonel Smith had had a similar experience. There was no finer body of sportsmen in the world than American surgeons, but in every country there were a few who "shoot the pigeon sitting." Dr. Barraquer operated on some cases and never saw them again; some of them were talked over or reported adversely, the venom losing nothing as it passed round. The speaker was similarly treated at Chicago, but on independent inquiry it was found that the results were twice as good as reported: 6/50 turning out to be 6/6, and so on.

They were told that the old operation was satisfactory; why then this search for a better one? Their answer was: Take the immature cataract as one of the many cases in which it was not satisfactory. In this and every country they were very numerous; men in the prime of life—50 to 60—found themselves put on the shelf, so to speak, for five years, ten years, or even for life, until their cataracts were ready for the old operation. The penalty of waiting was tremendous; the demand was insistent, and they must give such patients relief. The old operation could not do it, but the new one could. India with its 40,000 cataracts a year, mostly intracapsular, would determine this question.

Mr. M. L. HEPBURN (London) said that in proposing and performing a new operation the aim of the surgeon should be to remove the disadvantages of the old operations without introducing any fresh ones. Only in this way could they arrive at perfection in surgical technique. He was prepared to admit that Professor Barraquer's operation was an ideal one, if no objections to it could be found. Another point in bringing forward a new operation was to avoid exaggerating the weaknesses and disadvantages of the older operations so as to throw into relief the method which specially appealed to the particular surgeon; in this connexion he dealt first of all with what Professor Barraquer called the principal defects in the operation of cystotomy.

The exertion of pressure in any way was a decided objection to the older operations, but who in these days ever exerted this pressure with the finger on the lower lid—a most septic procedure? The necessary instruments entering the anterior chamber were at the most three, and possibly only one, and if all the instruments were sterilized together he failed to see any objection to this, except the danger of a patient moving his eye at the moment when any particular instrument was being inserted; in his experience accidents from this cause practically never occurred. Then, again, "traumatizing the iris and favouring iritis" was largely a theoretical objection; without bringing forward numerical statistics, he was prepared to say that the degree of reaction following any intraocular operation was about equally divided between those in which the iris was cut and those in which it was left intact. Again, as regards the retention of lens capsule and remains of lens cortex in the eye—the only danger of lens capsule being left in the eye was that it might be caught up to the wound, which could be avoided by doing a simple extraction. The retention of lens cortex was by no means so dangerous as formerly, except when it was infected, and in these days of asepsis such a complication need not seriously be considered. In the days when asepsis was not practised the retention of lens matter in the eye was to be feared; but ophthalmic surgery had advanced in this respect concurrently with other branches of surgery.

The chief points in favour of the various operations could be crystallized as follows:

1. Intracapsular. Removal of the lens entirely with its capsule and thus rendering a needling operation unnecessary. Also in the Barraquer operation the elimination of all pressure on the globe.

2. Simple extraction; cystotomy operation. To prevent the capsule being caught up in the wound.

3. Combined extraction; cystotomy operation. To obviate prolapse of the iris, and to enable the lens to be delivered with less pressure. The objections to the two latter operations could be summed up as follows: Prolapse of the iris in simple extractions, and the inclusion of the capsule in the wound in combined extractions. All other disadvantages or advantages usually advanced against or in favour of one or the other were of minor consideration and often had no foundation in fact.

Skill in ophthalmic operations was acquired by continual practice, but all efforts were in the direction of lightness of hand; when this was maintained at a high level, the results by any method of operation were undoubtedly better. In all intracapsular operations the rupture of the suspensory ligament was essential, and the question was how much force was necessary for this to be produced satisfactorily. In Smith's operation rupture of the capsule was accomplished by pressure from without, and, while in skilled hands this amount of pressure was reduced to a minimum, yet it was a principle they all tried to avoid as much as possible, and in Professor Barraquer's operation this was absent altogether. In the operation now being discussed the force was exercised by a pulling action, which in his opinion was preferable to the pressure method.

In spite of the apparent advantages of the Barraquer operation they were faced with serious complications which militated against a perfect result, and over which they might have little control. In the first place, would the vacuum produced by the pneumatic cup hold the lens firmly enough through all the manœuvres it had to go through? If it did not hold, the suction action was communicated to other parts, resulting in the loss of vitreous and inclusion of the iris. For the necessary pneumatic power they were dependent, not on skill, but on the perfection of the electrical apparatus at their side. It was true that they could partly control it by sliding their finger or thumb over the hole in the erisiphaque and maintaining it there in a firm position; but this firm pressure on a relatively clumsy instrument could not fail to produce strong contraction of the muscles of the hand which led to the reverse of light handedness, so essential in ophthalmic operations. Every advocate of the intracapsular operation did not deplore the loss of vitreous, but he noticed that Professor Barraquer's methods were associated with the desire to maintain the integrity of the vitreous, and with this he entirely agreed. He regarded the loss of vitreous as a distinct disaster, although perfectly aware that fluid vitreous was easily replaced with very little effect on the ultimate acuity of vision, but in a large number of cases any loss predisposed to detachment of the retina and other complications, and he was convinced that any teacher of surgery and any exponent of the new operative procedures should never treat lightly the loss of vitreous. He did not quite agree that "very little pressure causes rupture of the hyaloid" unless the hyaloid was weak, as in some cases of myopia, or in a secondary cataract due to iridocyclitis; but when the vitreous was fluid the tendency to rupture was increased by undue pressure.

Turning to his own experiences and those of his colleagues at Moorfields, he added that he had done the operation once or twice himself and had been thoroughly convinced of its dangers. Two of his colleagues had performed this operation many times, and from close study of their experiences (*Trans. Ophth. Soc.*, 1923) he was satisfied that the loss of vitreous and other difficulties were far in excess of those experienced in the older cystotomy operations. The loss of vitreous was 25 per cent. in the one case and 23.65 per cent. in the other, while the total amount of failures due to all complications, including loss of vitreous, was 40 per cent. in the one case and 42 per cent. in the other. They mentioned other difficulties in the technique not found in the older operations, and from their own experiences over a series of cases they had now abandoned the operation altogether. As regards the visual acuity attained as a result of the various operations, there was nothing to choose between a successful intracapsular operation and a cystotomy operation. Some advocates of the intracapsular method maintained that the patient had better vision afterwards than when a cystotomy operation had been performed; but, judging by their usual standards, he did not see that they could desire anything better than 6/6 and J. 1, which occurred repeatedly after the latter operation. On the whole he was strongly of opinion that the disadvantages of the Barraquer operation far outweighed the advantages, and could not be recommended as the cataract operation of the future.

Mr. J. GRAY CLEGG (Manchester) had had some experience of the expression method of intracapsular extraction, but had been unable to satisy himself that it was as safe as the older cystotomy procedure. Some twelve years ago the late Professor Stanculeanu of Bucarest presented him with a pair of his avulsion capsule forceps, used in much the same way as that which Mr. Sinclair now employed. He found that the capsule was often torn by them, and he therefore had abandoned the method, but he intended, with the improved pattern of Mr. Sinclair, to return to it. In the United States during 1922 he had watched Professor Barraquer employ his special procedure, and he was struck by his great skill and delicacy of touch. In several cases there were difficulties with the erisiphaque on account of the unaccustomed electrical connexions, etc., and therefore Professor Barraquer was handicapped to a certain extent. The fact that the apparatus was delicate and required frequent adjustment formed a decided objection to its use by others in general. In reply to a query by Mr. Clegg at the International Congress of Ophthalmology at Washington two years ago about complications, he stated that there were practically none. He asked whether Mr. Sinclair now resorted to his traction operations in all or most of his recent extractions. It did not appear certain that a

partial vacuum on the anterior capsule necessarily implied a vacuum in the vitreous. Mr. Clegg presumed that the head band and retractor was suggested by Colonel Smith as being better than production of paralysis of the orbicularis muscle by subcutaneous injection. In this country Mr. Clegg had found that most patients were as quiet as could be desired, and it was therefore only necessary in particularly refractory and uncontrolled persons to resort to measures to prevent the nut-cracker action of the lids.

Mr. Bishop Harman (London) said that the apparatus needed for the performance of the operation of Professor Barraquer put the procedure in a class by itself. It could only be performed in a regular eye clinic where there was available every resource in equipment and skilled assistance; it was useless in the many places where most of their work had to be done. Who would propose to carry such an elaborate installation into the country?—yet they had to operate in the country. Again, the elaboration of instruments not only limited the sphere of the surgeon's operations, but it reflexly affected his mentality, and therefore his skill in operating. If his attention was diverted to the care of a number of extremely complicated instruments it was certain he could give less attention to his patient, so that the primary object of the procedure was obscured.

Of Colonel Smith's methods of expression he would say that the degree of force required for its performance, at any rate upon Europeans with their tough connective tissues, was unwarrantable. Far greater risks were run by that excessive force than could possibly be entailed by a needling operation of an after-cataract formed by a dense capsular remnant. His personal experience was all in favour of the safe simplicity of the extraction of cataract after cystotomy, and he would never submit a British patient to forcible expression within the capsule. He was impressed by Mr. Sinclair's experiments in removing the lens intact by forceps, and thought the procedure worth trying, for it did not entail dangerous violence.

Mr. Harrison Butler (Leamington) asked what was wrong with the ordinary method of cataract extraction. Under the best conditions it gave about 95 per cent. of reasonably good results, and the loss of vitreous could be reduced to about 2 or 3 per cent. He invariably paralysed the orbicularis with an injection of novocain, and generally used a conjunctival bridge. By this method he had reduced his vitreous loss to a minimum. He had seen Barraquer's method of extraction and was not at all impressed with it: the pump gave a great deal of trouble and the operation lasted about half an hour. He was struck with the distension of the wound caused by the exit of the lens with the spoon, which seemed to add about 50 per cent. to the thickness of the lens. He could see no reason for adopting a method which was complicated and dangerous when the orthodox operation yielded such good results.

Mr. R. J. Coulter (Newport) considered the instrument shown by Colonel Smith unnecessary, since the same result could be obtained by the use of the lid hook as suggested by Colonel Smith himself, but held by the surgeon instead of by his assistant.

Mr. A. L. Whitehead (Leeds), speaking as a surgeon of some years' experience, deprecated the use of complicated mechanism in any form of operative surgery. In all branches of surgery history showed that such aids were sooner or later abandoned; in fact, the more complicated the apparatus the shorter was its reign. In the hands of the originator or his immediate pupils excellent results might be obtained, but the large majority of surgeons inevitably found that the complications outweighed the advantages. Unless it proved possible to simplify Professor Barraquer's apparatus it would not be acceptable to the majority of ophthalmic surgeons.

Colonel Smith's operation required no elaborate apparatus, but it demanded dexterity, skill, and an enormous experience which the opportunities of the average British surgeon did not supply. Mr. Sinclair's method seemed well within the powers of the average surgeon. Should the forceps fail to hold the capsule the effect was simply that of a capsulotomy according to the plan of Knapp and Fuchs; but the loss of vitreous, about 14 per cent., was very much higher than was usual in the ordinary operation with rupture of the capsule by a cystotome. The speaker very much doubted whether this operation had any real advantages over the usual operation which he practised—a combined extraction with a large section, a conjunctival flap, and capsulotomy by a cystotome. In his hands, even in extraction of immature cataract, the percentage of loss of vitreous had been almost negligible, and the after-results were very good.

Mr. E. E. Maddox (Bournemouth) said that just after carefully studying Colonel Smith's excellent book about his operation, and whilst deliberating whether it would be justifiable to attempt it, he had had the good fortune to receive a flying visit from Major McKechnie, who arrived so full of enthusiasm for this operation that Mr. Maddox seized the opportunity to ask him to hold the lids of a hospital patient while the intracapsular extraction was performed. Mr. Maddox adhered loyally to every detail as laid down by Colonel Smith, and the lens emerged so neatly, and left so good a pupil without loss of vitreous, that the speaker naturally became enthusiastic also. He had treated about fifty patients, nearly half by Smith's method, and the remainder by removing the lens with a little loop made for the purpose, like a short-handled bent vectis. Vitreous was lost in a good many, but the results on the whole were quite as good as with ordinary extraction. He would not advise intracapsular methods for lenses fully ripe and suitable for simple extraction, but there were certain cases for which it was highly advantageous, more particularly those in which there was a tendency to gouty iritis or chemical glaucoma, likely to be precipitated by thickening of aqueous with dissolving lens matter. Even when the other eye had been lost elsewhere, he had in three cases removed the lens in its capsule for reasons of this kind.

As regards Barraquer's operation, the chief advantage claimed for it, of the absence of all pressure upon the globe, might not be so unmixed a blessing as it seemed, for the alleged tendency to detachment of the retina would be lessened by simultaneous pressure upon the lower part of the cornea to compensate for the retirement of the lens from its bed, and the ideal operation might prove to be one in which the *vis a fronte* was supplemented by a *vis a tergo*. It was not the vacuum in the sucker which would affect the retina, but the complete occupation of the wound by the lens during its exit, which prevented the entrance of air to fill the space behind it. With an elastic sclera sufficient contraction no doubt took place to obliterate the potential cavity, but with a hardened sclera the danger of detachment might be great. Intracapsular extraction by pressure from without demanded such intense concentration and alertness on the part of the operator, that it was not wise to attempt it under difficulties—as, for example, when overworked or indisposed.

Dr. Gordon Spencer (Mesopotamia) considered that the discussion was of great value. A simple apparatus for any operation was essential, since in foreign countries the assistants were usually incompetent and replacement of instruments impossible. This ruled out Dr. Barraquer's operation. Colonel Smith's operation was excellent in the right hands, but required too much practice. Mr. Sinclair's method held out great promise, because an intracapsular operation was desirable; so many patients returned to their homes with a secondary cataract and were never seen again.

Mr. O. G. Morgan (London) thought that two very important arguments against the intracapsular operations were the extremely common slight loss of vitreous and the association of iridectomy. Although a large loss of vitreous was a tragedy and a small loss was dangerous, and was only one point removed in danger from capsule in the wound, strands of vitreous in the wound formed a track for infection, delayed the healing of the wound, and by contraction seemed to draw the iris, especially the pillars in iridectomy, into the wound, causing prolapse.

Cystotomy was neither difficult, if performed within two to three weeks, when the average patient was quiet, or dangerous if aqueous was not lost, thus preventing the prolapse of vitreous into the anterior chamber. A simple extraction, or one with peripheral iridotomy, was to his mind the ideal operation. By causing adhesion of the anterior and posterior parts of the lens capsule it prevented capsule in the wound, and, even if iris prolapse occurred twenty-four hours afterwards, and this adhesion had taken place, this, the most serious complication of the operation, was avoided.

PARESIS OF THE ACCOMMODATION AS A LATE SEQUELA OF ENCEPHALITIS LETHARGICA.

BY

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MILD attacks of encephalitis lethargica are probably much more frequent than is generally believed. The symptoms are very similar to those of typical encephalitis, but are transient and leave no permanent ill effects. They are often incorrectly diagnosed as influenza, but the ocular symptoms should indicate the true diagnosis. Diplopia, often very transient, and a slight paresis of certain extra- and intraocular muscles will always be found.

In one case under my observation in a child double vision was not complained of, but the parents noticed that the boy constantly misjudged distances and had difficulty in directing food to his mouth. Affections of the ocular muscles are probably the most common of all the symptoms of this disease in the acute stage of both severe and mild attacks. As a final result or sequela they are less frequently present.

Many cases have been recorded in which paralysis or paresis of the accommodation has been found in association with palsies of the external ocular muscles. As an isolated symptom it is much less frequent, and a series of such cases having recently come under my observation, it seemed advisable to place them on record. Through the courtesy of Dr. Johnstone Jervis, the medical officer of health for Leeds, I have been able to obtain particulars of twenty-four cases of encephalitis lethargica occurring in the Leeds area in the first six months of this year. Ocular symptoms were present in all in the early stages, and in some persisted for long periods. Most of the cases were serious, and the diagnosis was made without much difficulty. In the case of four patients who came under my care complaining of defective vision, the original illness had been mild, followed by a more or less complete return to good general health; in only one had a diagnosis of encephalitis been made.

The brief notes of these cases are as follows:

T. R. B., male, aged 28, was seen first on March 10th, 1924. Six weeks previously he had been ill for a few days with severe headache and dilatation of the left pupil; on recovering he found that he was unable to read ordinary print but his distant vision was unaffected. The dilatation of the left pupil gradually passed off and the pupils were now equal. Vision was 6/6 in each eye with normal refraction; he could read J. 1 easily at 14 inches with + 2.5 D. sph. for each eye. The condition had improved in June, so that he was able to read J. 1 with + 2.0 D. sph.

D. B., female, aged 16, seen on March 24th, 1924. There had been a sudden illness seven days previously, with severe headache and diplopia, lasting five days; she was now unable to read. The vision was 6/6 in each eye, refraction normal. Paresis of accommodation was present; she could read J. 1 with + 3 D. sph. On June 12th she could read J. 1 with + 2.5 D. sph.

E. M., male, aged 32, seen on April 28th, 1924. Four weeks previously he had had a severe illness, with headaches and diplopia, for about a week, and encephalitis lethargica was diagnosed. Recovery was gradual, and he now feels perfectly well, but is unable to read. The pupils are rather large, but reacting and equal. There is a well marked paresis of accommodation, corrected by + 2.5 D. sph. The right eye is hypermetropic, vision 6/18; the left is emmetropic, vision 6/6. On June 20th the condition was unaltered, but on July 14th he was able to read J. 1 with + 2.5 D. sph.

W. F. T., male, aged 12, seen on May 5th, 1924. About a month previously he became drowsy and had diplopia. Subsequently he was heavy and very slow mentally, and was inclined to sleep frequently during the day. He complained of inability to read any except very large print. The vision was 6/6 in each eye, refraction normal; he required + 1.5 D. sph. to read J.1. On June 19th he was much brighter, and read J. 1 with + 1.0 D. sph.

There has been progressive but slow improvement in these cases.

Paresis of the accommodation is apparently most common in the mild cases of encephalitis lethargica, and it has not been observed as a sequela in any of the severe cases occurring in this district, except in association with such other ocular symptoms as inequality of the pupils, defect in convergence, or a complete third nerve palsy. It bears some resemblance to the paralysis of the accommodation which occurs in diphtheria epidemics, in that it appears in mild and somewhat atypical cases. It is well known to ophthalmic surgeons that a definite history of diphtheria is often very difficult to obtain in post-diphtheritic cycloplegia—often the only complaint is of a mild transient sore throat during a diphtheria epidemic—or where diphtheria has been present in the same house or district. In three of my cases the original attack was so slight as not to direct attention to the real nature of the illness. It is on account of the diagnostic significance of this partial cycloplegia in association with the antecedent history that I have brought these cases to your notice.

Mr. HARRISON BUTLER (Leamington) had seen several cases of encephalitis during the previous six months; in fact, at one time several cases a day came to the Birmingham Eye Hospital. In all there was a history of "influenza," followed by the paralysis of an eye muscle. Unfortunately he had seen four cases in which the optic nerve was affected—three of retrobulbar neuritis and one of optic neuritis. Two were followed by almost total blindness and two made a complete recovery.

RELATION OF THE BLOOD UREA TO DIABETIC COMA AND TO THE DURATION OF DIABETES MELLITUS.*

BY

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As the blood urea concentration in cases of eclampsia and of diabetic coma is at present under discussion[1] it may be of interest to publish some results which were obtained in a recent investigation on certain blood constituents in diabetic patients under treatment by insulin. Two cases of coma are described, and a table is given showing the blood sugar and urea content of fourteen patients, in whom the duration of the diabetes mellitus was known.

The estimations of blood sugar were made by Wallis and Gallagher's modification[2] of the Folin-Wu method; those of blood urea by the method of Twort and Archer.[3]

CASE I.

A married woman aged 56. Her aunt had suffered from diabetes mellitus, and she had noticed the symptoms in herself six years ago. She had been treated for four years. On November 17th, 1923, she had pain in her knee; on November 19th vomiting and loss of appetite. On the night of November 22nd she lost consciousness, and was admitted on the afternoon of November 23rd semi-conscious, but unable to speak. The temperature was 97.6° F., and the urine contained much sugar and acetone.

One hour after admission, having had nothing but water during the previous twenty-four hours, her blood contained 466 mg. of sugar and 84.2 mg. of urea per 100 c.cm. On the following morning, after a diet of water only and 90 units of insulin, the last 20 units having been given four hours previously, the figures were respectively 268 mg. and 44.7 mg. per 100 c.cm.

On November 27th, on a diet containing 24 grams of protein and 110 units of insulin in the twenty-four hours, the figures were 300 mg. and 30.9 mg.

On December 11th, on a diet containing 51 grams of protein and 40 units of insulin, the figures were 168 mg. and 24.1 mg.

On January 5th, 1924, on a diet containing 63.5 grams of protein and 40 units of insulin, the figures were 215 mg. and 21.9 mg. per 100 c.cm. of blood.

It will be seen, then, that in this case the initial high blood urea fell more or less concurrently with the blood sugar as the result of treating the diabetes.

* Extract from a report to the Science Committee of the British Medical Association.

CASE II.

An unmarried woman, aged 20, stated that appetite and thirst had for several months been unusually great. One month previously she had noticed loss of weight. For twelve days she had ceased to work owing to weakness. On January 2nd, 1924, she felt definitely unwell. On January 4th she "fainted" and was admitted to hospital sufficiently conscious to attempt, unsuccessfully, to answer questions. The knee-jerks and abdominal reflexes were then absent, but returned before the second examination of the blood was made. One hour after admission, having had an almost protein-free diet during the previous twenty-four hours, the concentrations of sugar and of urea in the blood were respectively 620 mg. and 27 mg. per 100 c.cm. On the following day, after an enema of olive and castor oils, the administration by the rectum of half a pint of water every hour, and a total of 40 units of insulin, the figures were 250 mg. and 41.4 mg.

Thus, in the second case the concentration of blood urea was within the normal limits and actually rose as the blood sugar concentration decreased and the clinical signs of coma disappeared.

Since the blood urea concentration is not necessarily increased in diabetic coma, it follows that the kidney threshold for urea is not necessarily raised. One or two estimations done some time ago on the blood of eclamptic patients showed a normal concentration of urea. These results and those of De Wesselow,[4] who studied the coma of nephritis, suggest that coma is not due to hyperuraemia. Among the possible causes are an increase in the inorganic phosphates, a relative alteration in the amounts of the inorganic constituents, and an alteration in the hydrogen-ion concentration of the blood. I am inclined to suspect some decomposition product of urea, but the estimation of such products is difficult.

The table shows the blood urea concentrations of patients who had suffered from diabetes mellitus for various periods ranging from three months to seventeen years. Only those patients are included whose histories were definite and intelligent. Case 13 is the first case of coma described above, and the figures given are, as in all the other cases, those obtained on the first examination after admission. Case 14 is the second case described. In all the other cases the blood urea remained constant under diabetic treatment in hospital.

TABLE.

Case.	Sex.	Age (years).	Duration (years).	Blood Sugar (grams per 100 c.cm.).	Blood Urea (milligrams per 100 c.cm.).
1	M.	27	1/2	0.098	28.1
2	M.	28	1/4	0.088	25.0
3	M.	40	2	0.137	31.5
4	M.	63	17	0.113	25.6
5	F.	16	2	0.207	23.5
6	M.	66	1/4	0.173	29.9
7	F.	23	1½	0.336	34.7
8	F.	43	2½	0.137	31.5
9	M.	46	3	0.138	48.7
10	F.	52	3½	0.242	28.0
11	F.	20	4	0.250	41.4
12	F.	20	1	0.108	24.5
13	F.	56	6	0.466	82.2
14	F.	20	1/4	0.620	27.0

It is of interest to note that the patient Case 4 in this table had a systolic pressure of 160 mm. Hg taken over the brachial artery by the auscultatory method, but no arterial thickening or proteinurea.

It seems certain that the duration of diabetes mellitus does not necessarily raise the concentration of blood urea. From this it may be inferred that the disease does not lessen the excretory power of the kidneys for urea.

The research on which this note is based was carried out at St. Bartholomew's Hospital. The author is deeply indebted to Sir Frederick Andrewes, F.R.S., to Dr Mackenzie Wallis, and to the members of the staff who allowed access to their patients. Towards the expenses of the research a grant was made by the British Medical Association.

Summary.

1. The concentration of blood urea in diabetic coma is not necessarily proportional either to the depth of the coma or to the concentration of blood sugar. Low concentrations have been found in the coma of eclampsia.

2. The concentration of blood urea does not necessarily rise in chronic diabetes mellitus. Diabetes mellitus does not raise the kidney threshold for urea.

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[1] BRITISH MEDICAL JOURNAL, 1923, i, 277. [2] *Lancet*, 1920, ii, 784. [3] Ibid., 1923, i, 1102. [4] *Quart. Journ. Med.*, 1923, 16, 341.

ACUTE PNEUMONIC PULMONARY TUBERCULOSIS TREATED BY ARTIFICIAL PNEUMOTHORAX.

NOTES ON TWO CASES.

BY

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IT is a matter of general experience that in a large proportion of cases of acute caseous tuberculosis (lobar pneumonic type) there is a fatal termination within three months of the onset of illness, while nearly all the remainder, who have succeeded in overcoming the initial toxaemia, succumb to fibro-caseous disease and bronchopneumonic extension within eighteen months. The very few who are alive at the end of two years tend to be hopelessly incapacitated by reason of extensive fibro-caseous and fibroid pulmonary disease. With the exception of the first case recorded below we do not know of one person undoubtedly afflicted with this form of pulmonary tuberculosis, who is in good health and able to do Grade III manual work more than two years after the onset of his disease.

Radiographic examination of this type of case shows that in addition to the primary "pneumonic" focus, there is within a few weeks, considerable secondary bronchopneumonic involvement of the remainder of the same lung, and also similar implication, to a variable extent, of the opposite lung, usually about its middle zone.

It is reasonable to suppose that toxaemia will be limited and further spread of disease to the opposite lung be checked, so soon as the primary lung can be collapsed by artificial pneumothorax.

Just as in the treatment by artificial pneumothorax of ordinary fibro-caseous tuberculosis the presence of definite (even considerable) disease in the "sound" lung need be no deterrent, if for other reasons the treatment is deemed advisable, so in the acute caseous form artificial pneumothorax should be attempted provided there be only a small or moderate (up to one-third) involvement of the "healthy" lung.

This almost inevitable secondary implication of the "healthy" lung is, however, one very cogent reason for beginning the treatment by artificial pneumothorax as early as possible, and another reason, equally cogent, is the fact that if treatment be delayed more than a few weeks the formation of tough pleural adhesions may prevent satisfactory collapse of the affected lung, and the efficacy of the treatment may be correspondingly impaired. It is not usually possible to diagnose this form of tuberculosis with certainty till the second or third week, since it is likely to be regarded as ordinary pneumonia till about the fourteenth day, when the absence of crisis, the swinging

temperature, and the evidence of softening may lead to a correct diagnosis; the discovery of tubercle bacilli in the sputum may be expected towards the end of the second week, but their appearance may be delayed for some time further. In any event we consider that the diagnosis should be established and treatment commenced in nearly every case by the end of the fourth week, and in some cases quite a week earlier.

At the present time there has not been recorded a sufficient number of cases of acute caseous tuberculosis treated by artificial pneumothorax to justify an opinion as to what percentage can be restored to health by this means, but we venture to publish a short account of our two first cases in the belief that the present very high death rate in this class of case will be reduced very materially, provided artificial pneumothorax treatment can be employed sufficiently early in the disease.

CASE I.

A. G., a schoolboy, aged 16 years, was always quite healthy till January 20th, 1922, when he contracted "influenza." He was treated by Dr. Milne of Streatham, who kept him in bed for two weeks; after a further week's convalescence the boy felt perfectly well and returned to school. The following day, February 11th, he shivered and had three haemoptyses, totalling about twelve ounces of blood. He was put to bed and Dr. Milne noted the rapid development of signs of consolidation in the upper half of the right lung, and, later on, increasing infiltration of the right base. At first the clinical picture resembled lobar pneumonia, but no crisis occurred, the temperature began to swing widely, and by the middle of March, in spite of the fact that no tubercle bacilli were found in the sputum on three occasions, Dr. Milne was satisfied that the case was one of acute pneumonic phthisis. On March 23rd the late Dr. Arthur Latham was asked to see the boy with a view to deciding whether artificial pneumothorax should be attempted. Dr. Latham agreed that this treatment would afford the only possible hope of recovery, and on March 24th the boy was admitted to St. George's Hospital, *x*-ray photographs being taken on his way from the receiving room to the ward. A few weeks later the onset of Dr. Latham's fatal illness precluded his further attendance at the hospital, and the subsequent treatment of the case devolved on the present writers.

Condition on admittance (March 24th).—A pale, wasted boy, with hectic flush, dirty tongue, injected fauces, and frequent cough; he was obviously very ill indeed. Temperature 102°, pulse 120, respirations 28. The right lung showed diminished expansion, especially of the upper half, with increased tactile vocal fremitus; solid dullness to percussion over the upper half, back and front; vocal resonance greatly increased, some aegophony. The breath sounds were tubular with many hard crackles and pleural creaks over the upper and middle lobes. The lower lobe showed impaired resonance and many medium and fine crepitations. The left lung was hyper-resonant and emphysematous, with a patch of fine crepitations in front of the axilla and a band of hard crepitations to the left of the vertebral column (? conducted from the other side). The heart, which was dilated, gave sounds of poor quality; there were no murmurs.

A skiagram showed much fibrosis with excavation of the upper and middle lobes of the right lung, with pleural involvement, and fine mottling all over the lower lobe. There was emphysema and general tuberculous infiltration of the left lung, chiefly in the lower lobe, and most marked just external to the cardiac impulse.

Subsequent Course of Case.—It was considered advisable to collapse the right lung fairly quickly. The first injection was given on March 25th; no difficulty was met with, and 320 c.cm. of oxygen were introduced. The initial manometer readings were −4, −8 cm., and the final −3, −6 cm. By the end of a fortnight five injections had been given, nitrogen being used after the first day, and satisfactory collapse had been achieved, the final pressure after treatment was maintained at roughly −1, +3 cm. A persistent adhesion from the apex to the first rib did not interfere with the collapse. The sputum, which after the first injection of gas was copious and loaded with tubercle bacilli, ceased completely when collapse had been achieved, and there has been none since April, 1922. Constitutional improvement was slow but steady; the temperature did not reach the normal for five months and was not stable for seven months; the pulse remained high for several months, but was down to 70—90 a minute by March, 1923. The weight rose in eighteen months from 99 lb. to 121 lb., but has fallen a little since manual work has been undertaken.

After nine weeks of treatment, pleurisy with effusion developed on the right side, with severe constitutional disturbance for several weeks. This necessitated gas replacement of the fluid, which took several weeks to re-form in any amount after the chest had been completely emptied. Finally, the fluid, though sterile, became purulent, and in July, 1923, was so thick that it could not be withdrawn through any ordinary aspirating apparatus. Accordingly 5 c.cm. of Gauvain's fluid* was injected to liquefy the effusion, and a few days later 18 oz. were removed with success. Since September, 1923, the boy has been at a sanatorium, where, we are informed, it was once necessary to liquefy and remove a thick effusion as described above, but since then no fluid has formed and ordinary gas refills are performed every fortnight or so. He is now doing Grade III work (pick and shovel and drawing a truck), is afebrile, and without cough; the signs in the left lung have long since disappeared and he looks and feels perfectly well.

*Camphor 1 part, thymol 2 parts, ether 3 parts.

CASE II.

W. H., a schoolboy, aged 15, was admitted to St. George's Hospital on January 1st, 1923, with a history of the sudden onset of illness with shivering, pain in the right chest, cough and expectoration, ten weeks before. Physical examination, as well as *x*-ray photographs, showed an almost identical condition to that described in Case I, except that there was rather more implication of the left lung. The same treatment was adopted, but owing to the existence of numerous tough adhesions only partial collapse of the right lung was obtained, in spite of the fact that the intrapleural pressure was raised at each treatment to +30 and +40 cm. Nevertheless progress has been, on the whole, satisfactory: the fever has disappeared, there is neither cough nor sputum, and moderate walking exercise has been permitted from time to time without obvious ill effect other than an increase in respiration rate. By reason of the pleural adhesions it is now (sixteen months after the beginning of treatment) impossible to introduce any more gas, and the lung has partly re-expanded, though with a very thickened pleura and marked falling in of the chest wall.

We do not maintain that this case is so satisfactory as the first one, and it is too early yet to say what may be his ultimate capacity for work or exercise; but we think that if he fails to make a good recovery it will be because he was not got at early enough to achieve full collapse of the damaged lung before the presence of multiple adhesions rendered this impossible.

A CASE OF STREPTOCOCCAL MENINGITIS TREATED WITH SERUM: RECOVERY.

BY

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RECOVERY from meningitis due to a haemolytic streptococcus is sufficiently rare to warrant placing the following case on record.

A girl, aged 10, of delicate constitution, had been subject to mucous catarrh of the bowel and mild attacks of acidosis associated with an irritable patchy dermatitis which were quickly relieved by treatment. Adenoids, but not the tonsils, were removed during 1922.

On March 14th, 1924, she was sent home from school with mild tonsillitis and a temperature of 99°. On March 18th she complained of earache; the tympanic membrane was hyperaemic but not bulging; on March 19th the temperature was 100° and the pain in the ear continued. On March 22nd the dermatitis was very troublesome, but the temperature was 98° F. On March 24th she had pain in the right ear and the breath smelt of acetone. Vomiting occurred, but was relieved by alkali. On March 25th the pain in the ear ceased and she was better until March 30th, when persistent vomiting recurred and the vomit was thought to contain pus. Mr. E. S. Steward of Harrogate examined the ear, but did not consider there was any indication for surgical treatment. There was slight hyperaemia of the tympanic membrane, but no swelling or vertigo; the ear appeared to be settling down. A small amount of pus was squeezed from the right tonsil.

On March 31st she complained of severe frontal headache, said she saw two of everything, and was confused and apathetic. The temperature was 104° F. and she was seriously ill; the vomiting continued. The neck was stiff, with pain when the head was bent forwards. The knee-jerks were not obtained and Kernig's sign was present. Exploratory lumbar puncture yielded 20 c.cm. of turbid fluid under increased pressure; polymorphs 60 per cent., lymphocytes 40 per cent. No organisms were seen in direct smears. After the puncture the headache was relieved and the temperature dropped to 99.8°.

The headache and general symptoms returned next day and the temperature was 103° F. After the removal of 20 c.cm. of fluid 15 c.cm. of antimeningococcal serum were given intrathecally and 10 c.cm. subcutaneously. This was followed by great restlessness, much generalized pain, and considerable increase of the headache. Towards the end of the next day (April 2nd) there was distinct improvement and the temperature dropped to 100°. The pathological report upon the fluid was: "Fluid turbid, the turbidity being due to pus cells composed of polymorphs 64 per cent., lymphocytes 36 per cent. No blood present. Gold sol reaction *nil*. Globulin increased. Culture on solid media gave a moderate growth of a short chained streptococcus which was markedly haemolytic in character." Lumbar puncture was again performed;

the pressure and turbidity were less; 10 c.cm. of antistreptococcal serum were injected subcutaneously.

On April 3rd the improvement was very distinct. There was no headache and the mental condition was normal. Kernig's sign was not obtained. Lumbar puncture gave only slightly turbid fluid under normal pressure. Next day 6 c.cm. of clear fluid were obtained by puncture, and the patient was quite clear from symptoms. Except for a serum rash on April 10th recovery from this point was uneventful.

Remembering the rarity of primary streptococcal meningitis, it may be questioned whether in this case the meningitis was not secondary to an ear infection. There was evidence of ear disturbance following mild tonsillitis, and although a streptococcus was not recovered from the throat, we are of opinion that the meningitis was definitely related to the primary naso-pharyngeal condition. At no time previous to the meningitis or during the illness was there any aural discharge.

Numerous instances have been recorded of recovery following operation for meningitis developing during the course of middle-ear suppuration. Such cases have been reported by Holger Mygind[1] of Copenhagen amongst a series of 210 cases of otogenic meningitis, and also by G. J. Jenkins,[2] J. F. O'Malley,[2] and E. Watson-Williams.[2] In many of these cases the cerebro-spinal fluid was turbid to the naked eye, and organisms were seen in the direct smears of the fluid obtained by lumbar puncture. Apparently in only a very small minority of the patients who survived were organisms recovered by cultivation, and in no case was a streptococcus obtained. In all the cases the meningitis followed ear disease, and with the exception of one of Mygind's all the cases were operated upon and basal drainage brought about.

The unusualness of our case lies in the recovery without operation after a streptococcus had been obtained by culture from a markedly turbid fluid. We have found records of only two cases parallel with ours—one of the series reported by Mygind which was not operated upon (no organism was, however, recovered by culture), and a case reported by Archer[3] from which a haemolytic streptococcus was recovered by culture.

We are of opinion that the serum administered by intrathecal injection was definitely related to the improvement which took place within twenty-four hours, and that the horse serum itself produced some effect of the nature of foreign protein shock which resulted in the stimulation of the child's antibacterial powers.

It is hoped that the happy result in this case may stimulate others to treat energetically cases of meningitis, usually considered hopeless, by frequent lumbar puncture and early intrathecal injection of serum. In the absence of a complete bacteriological report it would seem worth while to make use of an antimeningococcal serum.

We wish to acknowledge the help afforded by Dr. Sinclair Miller, who carried out the bacteriological examinations.

REFERENCES.

[1] *Journ. of Laryngology*, 1922, xxxvii, 186. [2] *Proc. Roy. Soc. Med.*, Section of Otology, 1922. [3] *New York State Journ. Med.*, 1922, xxii, 158-161.

OBSTINATE CONSTIPATION TREATED BY CRUSHING THE LOWER END OF THE COLON AND UPPER END OF THE RECTUM.

BY

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THE subject of the operation here described was brought to me by Dr. James C. Watt, of the West African Medical Service, who supplied the history and urged the operative treatment which was carried out by me.

The patient, a man aged 36, was robust as a boy, but during adolescence he developed chronic dyspepsia with constipation. The tongue was generally coated, and he began to suffer from morning drowsiness and faintness on rising. When about 25 years old the constipation became severe, so that cathartics had to be used regularly, and the man became an invalid.

Right-sided abdominal pain and discomfort now became constant, and the pain in the hypochondriac region was so severe that cholelithiasis was diagnosed and the abdomen opened in 1922. No local lesion was found, but some peritoneal bands passed down to the ascending and transverse colon, matting these slightly, but not sufficiently so to cause noticeable obstruction. The appendix was removed at this time.

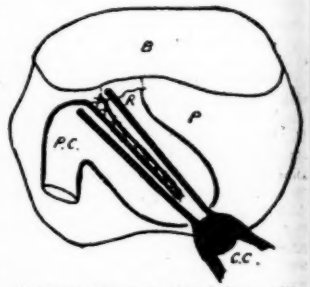
The patient was now hardly capable even of the lightest work; he was often melancholic, and "at the end of his tether." He was placed by Dr. Watt on a low protein diet and advised to use a bowel douche daily. There was immediate relief from all symptoms, the patient feeling happy and comfortable in body for the first time for years, but he could not regain a healthy degree of strength and still had attacks of obstinate constipation.

X-ray photographs taken in February, 1924, showed general atonicity and ptosis of the colon, characteristic of the asthenic type of chronic intestinal stasis. Shortly after this I was asked by Dr. Watt to see the case and consider the advisability of performing an operation to destroy sphincter action and kinking at the upper end of the rectum.

The patient was prepared for operation by Dr. Watt, who lays stress upon the thorough clearing out of the system by practical starvation, with copious water drinking and daily enema, until the tongue is clean and the abdomen concave; then low protein diet for a couple of days, and practical starvation for twenty-four hours before operation. Sips of water are allowed immediately after the operation; morphine is given as required; and a low protein diet gradually re-established, beginning about forty-eight hours after operation.

Operation.

The operation is simple and presents little difficulty in performance apart from the rather restricted space in the lower pelvis. With the patient in the Trendelenburg position, a vertical median incision was made in the lower abdomen, extending above the umbilicus. The bladder was turned forward, and the pelvic basin and pelvic colon exposed. A point on the pelvic colon, about four inches above the attachments of the peritoneal ligaments of the rectum, at which the kinking was marked, was chosen. A small incision was made at the apex of this kink into the interior of the bowel, and through this incision the blades of a large and powerful crushing forceps were introduced, one blade going into each limb of the V. One blade therefore descended, as it was introduced, toward the rectum, while the other ascended the pelvic colon. The blades were introduced to their full extent so that the blade which descended toward the rectum reached the insertion of the peritoneal ligaments. As the clamp was now closed, the two limbs of the V were approximated, so that four inches of the end of the pelvic colon and the beginning of the rectum lay parallel to four inches of pelvic colon immediately higher up.



Outline diagram of pelvis P, with bladder B drawn forward, showing crushing clamp CC inserted into interior of bowel through opening at apex of kink. One blade descends to rectum R (wavy line above R indicates line of peritoneal reflection); the other blade passes along pelvic colon PC. XXX indicates line of suture.

Care was taken at this stage to keep the mesenteric attachment of the bowel well away from the proposed line of crushing. The mesentery of both limbs was kept below, or posterior to, the position of the blades of the crushing forceps, and once this position had been assured the full crushing power of the forceps was applied.

The clamp was kept on for several minutes, and during this period a stitch was run along the junction of the two pieces of bowel above, or anterior to, the blades of the crushing forceps, so as to minimize the danger of separation of the pieces of bowel on removal of the clamp. The clamp was then slipped out carefully, and the preliminary incision made at the apex of the V was sutured. The abdominal wound was then stitched up.

The idea of the operation is that, once the two pieces of bowel wall which have been severely crushed have sloughed, a wide opening will be established between the upper end of the rectum and the pelvic colon, redundant pelvic colon and consequent kinking will be largely done away with, and in addition a sphincter action of the upper end of the rectum and kinking about the junction of the pelvic colon and upper rectum will be rendered impossible.

Certainly the results of the operation were remarkably good. The patient soon began to lose his melancholic symptoms; the tongue kept clean; and the bowels began to move naturally, once or twice daily, with the aid of a little virolax. He has recently been able to leave for New Zealand, feeling fit and able for his work. A letter received from him at the time of writing this states, "I am keeping very fit and have a bowel movement twice a day."

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

REFLEX VASOMOTOR INHIBITION IN LOBAR PNEUMONIA.

I desire to record the following unusually well marked instance of reflex vasomotor inhibition in a case of lobar pneumonia; the underlying factors doubtless exist in all cases of pneumonic consolidation. The phenomenon described may therefore well be present in a less easily recognized or more transient form in all such cases, and must in the present instance also have escaped observation but for the old-fashioned and apparently now unjustifiably discredited form of counter-irritation employed in treatment.

A. B., a healthy English male, 20 years of age, was suddenly attacked with acute lobar pneumonia. There was a well defined circular area of consolidation about four inches in diameter on the posterior aspect of the left lung immediately below the angle of the scapula. The case displayed no unusual symptoms, and treatment was mainly expectant, with counter-irritation in the form of linseed and mustard poultices over the affected region. After poulticing for twenty-four hours the skin involved showed the usual erythema with the exception of a sharply demarcated circular patch—corresponding exactly in size and position to the underlying consolidated portion of lung—the colour of which remained strikingly unaltered; continuous poulticing only gradually succeeded in reddening it. Recovery was uneventful.

This case furnishes an elegant illustration of the nervous connexion between the skin and underlying viscera, and suggests the rationale of treatment of various disorders of internal organs by local counter-irritation.

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STRANGULATED HERNIA IN INFANTS.

I have been interested to read the remarks on strangulated and irreducible hernia in infants in the Journal of July 12th, 26th, August 16th, and September 13th. The writers do not all clearly differentiate as regards the pathology of the conditions found, so that it is not always evident whether the hernias were *strangulated* (that is, whether the constriction at the neck of the sac was such as to interfere with the blood supply of the contents), *obstructed* (that is, interfering with the flow of contents through the lumen of the bowel), or *irreducible*, where no obstructive symptoms are present.

In a consecutive series of 1,500 operations for inguinal hernia in infants and young children I have operated on three cases where true strangulation had occurred.

Case I.

A premature infant (7 months), aged 5 weeks, and weighing just under 4 lb., was admitted to the Royal Hospital for Sick Children in June, 1922, from the Maternity Hospital, with a history of a right inguinal hernia, present since birth. Forty-eight hours before admission the infant, which was not thriving, refused its feeds, and vomited several times. The bowels were constipated, and the next evening the vomiting became faecal in character and the hernia was then noticed to be irreducible. On admission the abdomen was distended and the scrotum tense and oedematous, and an irreducible right inguinal hernia was present. Immediate operation was performed, practically without any anaesthetic. The sac contained a drop of blood-stained fluid, and a loop of ileum, greatly congested, and with the contiguous surfaces glued together by lymph. A tight constriction ring was divided and the bowel returned to the abdomen. The infant was sent back to the Maternity Hospital, but only survived for fourteen hours.

Case II.

J. C., a male infant, aged 12 days, was brought to the Children's Hospital with a history of a swollen scrotum, vomiting, and constipation for forty hours. The child had been seen by a medical student the day before, who, having failed to reduce the swelling by taxis, diagnosed hydrocele, and did nothing further. On admission a large irreducible left inguinal hernia was present; the scrotum was swollen and discoloured. At operation the hernial sac contained blood-stained fluid, and a loop of deeply congested ileum presented, showing a circular gangrenous patch about the size of a sixpenny piece, while the constricted portion of the gut was almost as bad. After dividing the constriction at the neck of the sac the affected loop was pulled on until healthy bowel came into view, and as invagination of the gangrenous portion was not possible, a hasty resection of 4 inches of bowel, with end-to-end anastomosis, was performed. The infant made a satisfactory recovery, and has since been operated on for a hernia on the opposite side.

Case III.

W. W., aged 2 years, had a history of two days' strangulation of a left inguinal hernia. At operation the sac contained blood-stained fluid mixed with liquid faeces and some fragments of undigested nuts. The strangulated loop of ileum had ruptured and was gangrenous. Resection of 6 inches, with end-to-end anastomosis and drainage of the sac, was followed by a satisfactory recovery, and the radical cure of the hernia was performed two years later.

The irreducible hernia as seen in the adult does not occur in young children, for as soon as the hernia becomes irreducible it also becomes obstructed, and gives rise to vomiting and, if unrelieved, to distension and constipation. At the same time, the great majority of such cases will reduce themselves if the infant is put to bed with the pelvis raised and a hot fomentation to the scrotum. The infant falls asleep, and almost invariably the hernia disappears. Failing this, *very* gentle taxis under light anaesthesia may be tried, and generally is successful.

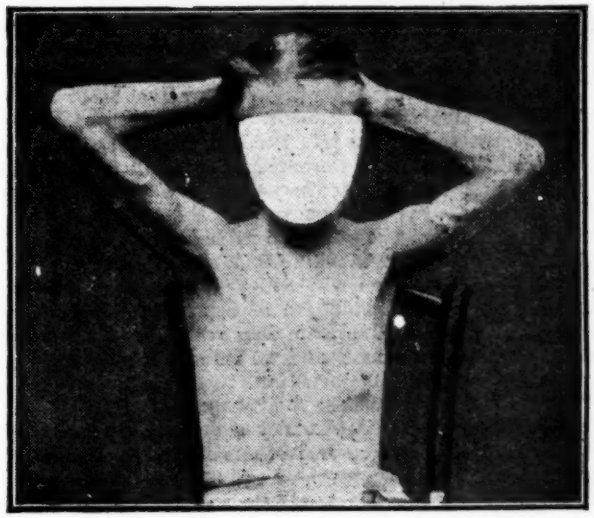
Where real strangulation has occurred, this is evidenced by oedema and discoloration of the scrotum, and operation should be performed without delay.

Gertrude M. A. Herzfeld, M.B., Ch.B, F.R.C.S.E.

Edinburgh.

ELONGATION OF BRACHIAL ARTERIES.

The illustration accompanying this note is reproduced from a photograph of a woman, aged 77, who was admitted to Tooting Bec Mental Hospital in February, 1924. I think the condition of her brachial arteries must be very uncommon. They appear to be congenitally too long for the



upper arm; in full extension they are quite visible and resemble in shape a bent bow. The appearance of the arteries with the arm in flexion is seen in the photograph; they close up like a U-spring. The depth of the loop is about 2½ in. I am indebted to Dr. E. H. Beresford, medical superintendent of the hospital, for leave to publish this case.

Thomas Lindsay, M.D., Ch.B.Edin., F.R.C.S.E., D.P.M Lond.

Tooting Bec Mental Hospital, S.W.17.

SPONTANEOUS RUPTURE OF THE HEART.

I should like to add another case of spontaneous rupture of the heart to the case published by Dr. Gilmore (British Medical Journal, August 30th, p. 373) and the interesting series by Dr. S. Watson Smith (September 13th, p. 465).

In March, 1924, a woman, aged 67, who never complained of any symptoms of heart trouble, retired to bed, and was found next morning dead and half undressed on the bedroom floor.

Post-mortem examination showed a well nourished woman with marked deposit of fat. The pericardial sac was full of blood clot, which was swabbed out. The heart was slightly enlarged and fatty. There was a vertical tear 1½ in. long in the middle third of the left ventricle; the heart muscle was very soft and studded with minute white patches, possibly fat. All the valves were normal, and there was no disease of the aorta.

George Levis, L.R.C.P. and S., D.P.H.

Lincoln.

Reviews.

THE TREATMENT OF GOITRE.

Last May (vol. i, p. 786) we published a review of Professor de Quervain's book on goitre, in which he showed himself an ardent advocate of the treatment of Graves's disease by surgical measures. Now we have Dr. Israel Bram's more bulky volume, entitled *Goiter*,[1] in which the case for its treatment by medical means is presented with an advocacy more ardent still. The former may be said to represent the case for the prosecution, the latter that for the defence; and if at times counsel for the defence somewhat overwhelms us with the torrent of his words, yet the conviction grows as we hear him to the end that he is pleading in a right cause, with sincerity of purpose and intimate practical acquaintance with his subject. Dr. Bram remarks in his preface that in most books on diseases of the thyroid gland practically all goitres are regarded as requiring surgical treatment at some time or other in their course, and that other measures, especially where Graves's disease is concerned, are only mentioned to be dismissed. Disagreeing whole-heartedly with this generalization, he desires to assist the general practitioner to classify cases into those amenable to non-surgical treatment and those amenable to surgical treatment, and also to indicate what methods bring about the best and the promptest results in those instances "obviously of non-surgical nature." Accordingly he provides a therapeutic classification of goitres, including in the non-surgical class simple parenchymatous hypertrophy, colloid goitre, puberty hyperplasia, and the hyperplastic thyroid swelling of Graves's disease or the diffuse non-incapsulated swellings of the gland; in the surgical class he includes adenomatous, cystic, and all other types of thyroid enlargement not included under non-surgical goitre. This classification is perhaps as good, if not better, than any other; at all events it is convenient in reaching a decision as to the best line of treatment to be followed in each individual case. Few will quarrel with Dr. Bram's therapeutic classification, the surgeons perhaps least of all, in so far as simple parenchymatous, colloid, and adolescent goitres are concerned, but there will still be found many who will disagree with his bold inclusion of Graves's disease among non-surgical goitres. Dr. Bram does not make this inclusion without giving his reasons, and we think that the unprejudiced general practitioner will find them at least as sound as those on which others base their arguments for regarding this complex disorder as primarily a disease of the thyroid gland curable only by removal of the major portion of the organ.

After dealing with the anatomy and physiology of the gland, Dr. Bram goes on to consider the diagnosis of goitres. He insists that right therapy can be based only on right diagnosis, to be made only after a thorough investigation of each patient from every point of view—environmental as well as physical and mental. Individualization, combined with the careful selection of the measures to be employed, and the concerted and harmonious action of medical attendant and patient, comprise the measures "upon which success is assured." Three chapters, about fifty pages, are devoted to endemic, sporadic, and puberty goitres; twenty chapters, or approximately 350 pages, to Graves's disease. The author considers that endemic goitre is caused by "a geographical deficiency of iodine in the air, food, or water"; this view is too narrow, and loses sight of other important factors in causation. Sporadic goitre he regards as being due to a variety of causes, among which are heredity, puberty, adolescence, pregnancy, lactation, menstruation, diseases of the female reproductive organs, focal infections, and acute infectious diseases, "none of which are dependent upon a deficiency of iodine intake." As to the causation of Graves's disease, he has nothing new to say, but his view that the malady is a generalized defect in the action of the vegetative nervous system and of the entire chain of endocrine organs is a good working hypothesis for those who have to treat the disease. The last 200 pages, which deal with the management and treatment of Graves's disease, are the best in the book. Although "there is no specific method of therapeutic procedure" the author affirms that "the properly equipped internist, after eliminating those who are moribund, the insane and the non-co-operative, all of whom constitute approximately 10 per cent. of patients who apply for treatment, should obtain 100 per cent. recoveries" by the judicious application of psychotherapeutic, hygienic, dietetic, and medicinal measures. In the ardour of his advocacy of the non-surgical treatment of Graves's disease, Dr. Bram has made his book too lengthy, and its size may make the busy practitioner shy of embarking on its perusal. This would be regrettable, for we agree with the author that the majority of cases of Graves's disease can, and ought to be, dealt with by the family physician, who must possess the requisite knowledge and understanding. There is much truth in Dr. Bram's assertion that "it is the dormant attitude of medical men in general that is responsible for thyroidectomies in Graves's disease." The reviewer recalls in this connexion the plaint made to him not long ago by one of our foremost thyroid surgeons: "I wish there were more physicians who would undertake the treatment of these cases. If there were, fewer would need to be sent to the surgeon." The book contains 150 excellent photographic illustrations and an adequate index.

R. McCarrison.

[1] *Goiter: Non-surgical Types and Treatment.* By Israel Bram, M.D. New York: The Macmillan Company. 1924. (Med. 8vo, pp. xviii + 479; 152 figures. 6.50 dollars.)

ENCYCLOPAEDIA MEDICA.

We welcome the appearance of the twelfth volume (Skin—Tuberculosis) of the second edition of the *Encyclopaedia Medica*,[2] of which the last volume was reviewed by us a few months ago (British Medical Journal, April 26th, 1924, p. 751). Of the principal articles four are new—those on stillbirth by Dr. F. J. Browne, on the sugar of the blood by Dr. C. G. Lambie, on injuries and diseases of the tendons and tendon sheaths by Mr. A. H. Tubby, and on trench fever by Dr. J. W. McNee. Seventeen articles have been rewritten, and one article, that by the late Mr. Alexander Miles, has been revised by a fresh hand (Sir D'Arcy Power).

The article on the skin, which is the largest in the volume, is the work of five writers, and appears to be the same as in the first edition. Three subjects—the spleen, the stomach and duodenum, and the thyroid gland—are each the joint work of a physician and a surgeon. On the other hand, the vast subjects of syphilis and tuberculosis are each described by a single writer. The principal surgical articles, apart from those already mentioned, are articles on surgical affection of the spine by Mr. A. H. Tubby, suppuration by Sir G. Lenthal Cheatle, affections of the trachea by Professor Leonard Gamgee and Mr. E. M. Woodman, and transfusion by Mr. James M. Graham. Neurological articles have been contributed by Dr. James Collier, who writes on the spinal cord; Dr. Edwin Bramwell, who discusses syringomyelia and tendon-jerks; Mr. David Lees, who deals with tabes dorsalis; and Dr. E. Farquhar Buzzard with tremors.

Among the miscellaneous subjects we may call attention to the article by Sir Thomas Oliver on dangerous trades, and that by Mr. T. W. Drinkwater on toxicology. The article on stomatitis by Dr. G. F. Still is an excellent practical discussion of the subject, for though the majority of such cases are often regarded as of minor importance, some may give rise to a great deal of trouble in practice. He might perhaps have found space for an allusion to trench mouth and its relation to Vincent's angina. In Sir James Cantlie's article on sprue we see no reference to its treatment by calcium and parathyroid as recommended by Dr. Harold Scott. Such blemishes in so large a work do not detract from the general excellence of the new edition, now so rapidly nearing completion. With the exception of the photographs in the article on small-pox, which are too blurred to be of much value, the illustrations are excellent.

[2] *Encyclopaedia Medica.* Vol. XII. Edited by Alexander Goodall, M.D., F.R.C.P.E. Second edition. Edinburgh: W. Green and Son, Ltd. 1924. (Roy. 8vo, pp. viii + 769; illustrated. 30s. net.)

TREATMENT OF TUBERCULOSIS.

THE second edition of the *Domiciliary Treatment of Tuberculosis*,[3] by Dr. F. RUFENACHT WALTERS, manifests the usual characteristic of second editions—namely, an increase in size over the first. With the yearly additions to knowledge this may be regarded as inevitable, but with books, as with university curricula, in which there is a constant increment without a concomitant decline in the demand made on the student, a sad lack of appreciation of the principles of relativity is too often shown. In his medical course the student is expected to spend a quite unnecessary amount of time on subjects which are of comparatively little use to him in after life, whereas he is given the scantiest opportunity for training in subjects which will be of vital importance to his after-efficiency. There is so much respect paid to knowledge that it is only with the greatest difficulty that we can relinquish the idea of educating our sons on the teaching given to our fathers.

No one will dispute the value of the two new chapters which have been added to this edition; but it is a matter for regret that the space they occupy has been provided by increasing the length of the book rather than by eliminating some of its previous contents. This would not have been a difficult task. There is, for instance, far more than is necessary on such subjects as the different kinds of tuberculins, on therapeutic serums, and on the value of the opsonic index—subjects open to so much doubt and ambiguity that a discussion of them is likely to afford little help to the general practitioner for whom the book is written. On the other hand, the indications for artificial pneumothorax and the importance of secondary infections receive only brief recognition. Apart from these defects the book seems to fulfil its purpose very suitably, and possesses the great merit of containing frequent references to original authorities where the subjects discussed may be studied more in detail.

The second volume of the *Handbuch der gesamten Tuberkulose-Therapie*,[4] edited by Professor LOEWENSTEIN in collaboration with other authors, deals with the subject mainly on an anatomical basis, the organs being taken in order. Special chapters are devoted to a more general treatment of the subject; thus, the specific treatment of tuberculosis, its relation to the endocrine glands, the chemotherapy of tuberculosis, home treatment, and tuberculosis in the tropics, receive separate consideration.

Professor Loewenstein expresses the opinion that the only sure test of recovery is the disappearance of the bacilli—a test which is most readily applied in cases of pulmonary disease. Of 682 cases treated, some with old tuberculin and others with new tuberculin, the bacilli disappeared from the sputum in 52.93 per cent., a result which compares favourably with that obtained from hygienic and dietetic treatment, in which the bacilli disappeared in 12 per cent. of the cases only. It is asserted that almost all clinicians are now satisfied of the value of the specific treatment. Animal serums, whether normal or immunized, have been proved to possess no therapeutic action. Professor Carpi gives the statistics of 120 cases of tuberculosis he has treated during the decade 1910-20 by the production of artificial pneumothorax. Of these, 26 were unfavourable for operation, which was merely adopted as a measure *in extremis*; in 28 there were complete or almost complete adhesions; in 4 the patients were lost sight of; in 66 the indications were favourable for operation, and the clinical results were good in 33, the cure being definitive in 23.

Among the numerous drugs in use much attention, it is said, has been given of late years to gold as a specific remedy in tuberculosis. The sodium-auro-cyanide is reported to have given good results experimentally in guinea-pigs, and in the treatment of lupus, but it was found to produce toxic effects; it was claimed, however, that these could be avoided by combining the gold with cantharidine and ethylene-diamine, as in the preparation "aurocantan." More recently a somewhat similar compound—krysolgan—has been recommended as having a direct action on the tubercle bacilli. There has been much discussion as to the degree of toxicity of these compounds, and reports have not been infrequent of such complications as rashes, nephritis, oedema, stomatitis, and gangrene of the mucous membrane, following their intravenous injection. Like all heavy metals, gold is a capillary poison, loosening the cement substance of the endothelium, relaxing the musculature, and tending to produce necrosis and gangrene; apparently the right compound for intravenous injection has yet to be discovered.

The volume affords a detailed survey of the therapy of tuberculosis from many standpoints; it contains a bibliography, and the views and experiences of different authors are discussed.

[3] *Domiciliary Treatment of Tuberculosis.* By F. Rufenacht Walters, M.D., B.S., M.R.C.P.Lond., F.R.C.S.Eng., Medical Director, Crooksbury Sanatorium. Second edition. London: Baillière, Tindall and Cox. (Post 8vo, pp. xi + 288. 7s. 6d. net.)

[4] *Handbuch der gesamten Tuberkulose-Therapie.* Herausgegeben von Prof. Dr. med. Ernst Loewenstein. Band II. Berlin and Vienna: Urban and Schwarzenberg. 1923. (Imp. 8vo, pp. viii + 2027: 190 figures, 5 plates. Paper covers, 33.75; bound, 38.25 Swiss francs.)

EPILEPSY.

DR. DONALD FRASER has written a book entitled *Clinical Studies in Epilepsy*,[5] in which he endeavours to deduce the possible cause of the idiopathic form of epilepsy from a study of the symptomatic cases where there is a definite lesion to account for the seizures. He has been much influenced by the work of Hughlings Jackson, who he believes laid the only foundation on which we can build satisfactorily for the future. Dr. Fraser takes the view that there can be no psychogenesis of epilepsy, as has been suggested by some writers of the psycho-analytic school, and holds that for a chronic disorder affecting nervous structures and tending to cause deterioration in them we must seek a material causation, no matter how great the psychic involvement may be. Unfortunately we are still entirely in the dark as to the causation of idiopathic epilepsy, and we cannot be said to have advanced appreciably, either in our understanding of this disorder or in its treatment, since the time when Hughlings Jackson expressed the view quoted by Dr. Fraser that "there is in a case of epilepsy grey matter which is so abnormally nourished that it occasionally reaches very high tension and very unstable equilibrium, and therefore explodes."

The opinion reached by Dr. Fraser, following a survey of the various theories of epilepsy, and a study of his clinical material, is very similar to that expressed by Hughlings Jackson in the above quotation. He stresses the effects of two main conditions as the only essential or necessary factors in the induction of an epileptic seizure of any kind: these are a toxin or toxins, wherever and however produced, noxious to cell or vessel, and a cerebro-spinal or cerebral reflex set up by the irritation of strain or defects in parts or centres serving special functions—a state analogous to Hughlings Jackson's irritable or explosive grey matter. It cannot be said that the views here advanced have any immediate practical bearings upon the treatment of epilepsy, but they certainly suggest directions in which research might be expected to add to our knowledge of this distressing disorder. Important advances have been made in physiological chemistry, and it may be that in course of time it may be possible to discover something like the hormone *y* which the author postulates as an important factor in resisting the influence of the toxin or toxins which initiate the epileptic movement.

[5] *Clinical Studies in Epilepsy: Composed of Clinical Notes on Some Epilepsies as Bearing on the Pathogenesis of Idiopathic Epilepsy.* By Donald Fraser, M.D., F.R.F.P. and S.Glas. Edinburgh: E. and S. Livingstone. 1924. (Cr. 8vo, pp. 243. 7s. 6d. net, postage 5d.)

THE PHYSICAL CHEMISTRY OF THE CELL.

AT the close of last year (November 24th, p. 989) we had occasion to review in these columns the first part of the fifth edition of Professor HÖBER's book on the physical chemistry of cells and tissues. Our welcome was tempered only by the regret that the publishers had not seen fit to indicate the scope of the part which was yet to be published. The omission is now repaired by the appearance of this part, and our appreciation for the renewed labours of the author becomes unreserved.

The duty of a reviewer of a volume which has received

the universal benediction of its readers is not difficult. On the one hand, he has but to advertise to its adherents the appearance of an edition new in material as well as in name. On the other hand, the obligation remains to offer the book to fresh readers. To all, then, whose thoughts enter the ill-charted forests where physical chemistry borders on physiology Professor Höber's work is proffered as the survey of a zealous explorer in the land. The first part reviewed the principles involved. The theories of solutions, ionic equilibria, the colloidal state, heterogeneous systems, catalysis, and enzymes were granted adequate preliminary treatment, and were followed by an authoritative discussion of osmosis and permeability in relation to the problems of the cell.

The second part,[6] which we now have under review, first extends the argument to the phenomenon of narcosis, wherein the work of O. Warburg, of Meyerhof, and of the author is admirably co-ordinated. The bewildering task of marshalling the data on haemolysis, agglutination and sedimentation, irritability, *p*H and ion antagonisms, is attacked in a lengthy chapter on the physiological effect of electrolytes. Here we welcome the due regard paid to the studies of Loeb, Osterhout, and the American school. For the electrical properties of matter, membrane potentials, polarization, and electro-osmosis, a chapter is reserved, and others are devoted to absorption and secretion and to the energetics of metabolism.

Enough has been said to indicate the magnitude of the labour. It only remains to add that whilst we may regret that we have not in our language a book of the same scope and fullness, it is yet a matter for congratulation that so large a labour for the service of physiology has been accomplished, and is being maintained up to date.

DISEASES OF THE EAR.

IT is satisfactory to learn that the second edition of *Diseases of the Ear*, by Dr. KERRISON, has been so well received that a third edition[7] has become necessary two years later. There is certainly no modern book which attempts with greater success a comprehensive and detailed survey of the subject, and its popularity is richly deserved; but it is doubtful whether the additions and alterations the author has introduced into the later editions add very much to its value. The merit of the book lies in the clear exposition of practical otology; it is such an account as could only be written by a master of the subject. The sections of aural surgery and the intracranial complications of middle-ear disease are brilliant. It is gratifying to observe that the work of Albert Gray on oto-sclerosis receives recognition in this edition, but where the author writes from knowledge acquired second-hand he does not always succeed in carrying the reader with him. Thus a chapter on tumours of the eighth nerve (an abstract of *Tumours of the Nervus Acusticus* by Cushing) has been introduced, and properly so, but the writing does not reach the level of the main body of the work. The chapter on facial palsy, again, is sadly out of date. One unfortunate error still persists: the illustration of Ballance's plastic operation on the meatus shows the flap cut upside down. These minor defects, however, do not greatly detract from the excellence of the textbook, which we do not doubt will hold its own for many years.

NOTES ON BOOKS.

DR. O. BURWINKEL'S short and remarkably readable monograph on angina pectoris[8] is founded on twenty-five years' practice at Nauheim. Angina pectoris is thought to have become much more frequent in recent years and to be no longer confined to middle age and advanced life; it is now, so we are told, not at all uncommon to meet with well marked cases in the twenties or thirties. The importance of syphilis in the etiology is emphasized, at least 50 per cent. of the patients giving a positive Wassermann reaction, although many of them appear to be genuinely unaware of their infection. Abuse of tobacco, especially excessive cigarette smoking, is held to be another important factor. After a graphic description of the symptoms the author discusses the prognosis, and, unlike some physicians, who are of opinion that death is inevitable within two or three years, maintains with Sir William Osler that life may be prolonged, and that even complete recovery may take place in a small number of cases. Special attention is given to treatment, including operation, though the author does not appear to have any personal experience of its results. A short bibliography, consisting mainly of German works, is appended.

Dr. L. MEUNIER'S *Histoire de la médecine depuis ses origines jusqu'à nos jours*[9] appears to be a reprint without any additions or changes of the edition published in 1911; though this perhaps does not make the same difference that it would in works on other aspects of medicine, it is not a recommendation to a history of medicine. Its nine chapters deal respectively with medicine before, during, and from the time of Hippocrates to that of Galen, the interval between Galen and the sixteenth century, the sixteenth, seventeenth, and eighteenth centuries; finally, two chapters are devoted to the nineteenth century. It certainly contains an enormous amount of information, but even in this respect, and especially in the absence of the relief provided by portraits of the prominent figures in medical history, it does not compare favourably with Garrison's attractive *Introduction to the History of Medicine*, now in its third edition.

The work on *Fertility and Sterility in Human Marriages*,[10] by Dr. EDWARD REYNOLDS and Dr. DONALD MACOMBER, of Boston, contains five sections. The first consists of three chapters dealing respectively with fertility and sterility as biological problems, with the frequency of sterile marriages, and with the mechanism of fertility. The second section is devoted to a consideration of the determining causes of sterility in the female, which include chronic passive congestion of the pelvic organs, complete and partial arrests of development, specific and non-specific infections, dyspareunia, displacements, and neoplasms. The writers found that while in hospital work tubal inflammation due to gonorrhoea was very frequent, the percentage of tubal sterility of gonorrhoeal origin in private practice was very small. The third section, which is from the pen of Dr. Edward L. Young, Jr., deals with the determining causes of sterility in the male, including diseases of the testicle, prostate, and seminal vesicles, as well as impotence and allied conditions. In the fourth section relative infertility, the marital habit, and the prevention of sterility are discussed, special importance being attached to dietetic deficiencies as a cause of infertility. The fifth section consists of two chapters, the first of which describes the method of examining a case, while the second deals with the surgery of sterility, special attention being given to transuterine insufflation of the Fallopian tubes, which was first introduced by Rubin of New York in 1920.

The unfinished manuscript of a little book on diagnosis by laboratory methods at the bedside was found among the papers of the late Professor CHARLES LESIEUR.[11] It has been completed by Professor G. MOURIQUAND, his successor in the chair of general pathology and therapeutics in the Lyons Faculty of Medicine. The work is divided into three parts. In the first a description is given of simple methods employed for examination of the blood, urine, cerebro-spinal fluid, gastric contents, stools, pus, sputum, and various effusions; the second part deals with the bacteriological examination of wounds and biopsies; and the third part contains a brief description, in alphabetical order, of the micro-organisms associated with various diseases.

Pediatric Nursing,[12] by Miss BESSIE INGERSOLL CUTLER, is designed to help the nurse entrusted with the care of infants and children. It contains useful chapters on maternal nursing, artificial feeding of infants, food for the child, nursing technique in minor surgery and general therapeutic procedures,

[6] *Physikalische Chemie der Zelle und der Gewebe.* Von Dr. med. Rudolf Höber. Fünfte, neubearbeitete Auflage. 2 Hälfte. Leipzig: W. Engelmann. 1924. (Sup. roy. 8vo, pp. v + 545-906 + xvi; illustrated.)

[7] *Diseases of the Ear.* By Philip D. Kerrison, M.D. Third edition, revised and enlarged. Philadelphia and London: J. B. Lippincott Company. 1923. (Roy. 8vo, pp. xxi + 614; 328 figures. 35s. net.)

[8] *Die Angina Pectoris.* Von Dr. med. Oskar Burwinkel. Halle a. S.: Carl Marhold. 1924. (Demy 8vo, pp. 36.)

[9] *Histoire de la médecine depuis ses origines jusqu'à nos jours.* Par le Dr. L. Meunier. Préface par le Professeur Gilbert Ballet. Paris: Libraire E. le François. 1924. (Pp. vi + 637. Fr. 30.)

[10] *Fertility and Sterility in Human Marriages.* By Edward Reynolds, M.D., and Donald Macomber, M.D. With a section on the determining causes of male sterility, by Edward L. Young, Jr., M.D. Philadelphia and London: W. B. Saunders Company. 1924. (Med. 8vo, pp. 285; 17 figures. 25s. net.)

[11] *Diagnostic par les méthodes de laboratoire au lit du malade.* By Ch. Lesieur and G. Mouriquand. Collection des actualités médicales. Paris: L. B. Baillière et fils. 1923. (Double cr. 8vo, pp. 206. Fr. 6.)

[12] *Pediatric Nursing: its Principles and Practice.* By Bessie Ingersoll Cutler, R.N. New York: The Macmillan Company. 1923. (Demy 8vo, pp. xii + 478; 53 figures. 14s. net.)

the nursing of infectious diseases, and surgical nursing. Chapters on the mental development of children have been contributed by Frederica Beard, on the educational value of occupational therapy in the care of sick children by Susan Tracy, and on the orthopaedic nursing care of children by Catherine A. Smith. A selected bibliography by Frederica Beard of works on mental development, elementary psychology, and practical child study is appended. The work, which is more advanced than most books of the kind, is characterized by careful attention to detail.

PREPARATIONS AND APPLIANCES.

Glax-ovo.

We have received from Messrs. Glaxo samples of Glax-ovo and literature relating to it. This preparation, it is stated by the makers, is a mixture of dried milk, malt, barley kernels, and cocoa, to which has been added a new preparation, a vitamin concentrate prepared from cod-liver oil. It is stated, further, that Glax-ovo contains this fat-soluble bone-forming vitamin from cod-liver oil in a tasteless form, and that it is an easily digestible nutritious food in a very palatable form. The makers state that it consists of the solids of milk, together with malt flour, malt sugars, cane sugar, and cocoa, and they claim that its special value lies in its vitamin content, since they state that Glax-ovo contains vitamins B and C, and both forms of the fat-soluble vitamin A, the growth-promoting factor and the bone-forming or antirachitic factor. The special and remarkable claim of the makers is that they have succeeded in their laboratories in isolating from cod-liver oil a tasteless product which contains the antirachitic vitamin in 2,000 times as high a concentration as it occurs in cod-liver oil. A large amount of research work has been carried out in many scientific laboratories during the last few years on the isolation of the antirachitic factor of cod-liver oil, and remarkable advances have been reported in this country and in America. Messrs. Glaxo claim to have achieved a greater success than any previous workers, but if such a claim were made by a scientist it would not be accepted until all the methods had been published, so that anyone could repeat the experiments. We have no reason to doubt the makers' claims for Glax-ovo, but we have not been able to test them because a full test of these claims would involve several months of highly specialized research. We shall await with interest the confirmation of these claims from independent sources.

An Oxygen-Ether Apparatus.

Dr. W. B. Bacon (Royal Infirmary, Manchester) writes: The apparatus here described is intended for the administration of a constant quantity of oxygen with a variable amount of ether. The supply of oxygen can be directed either in part or in whole through the ether, so that the amount of ether can be varied from nothing, the patient receiving pure oxygen, to the maximum when all the oxygen passes through the ether. The apparatus resembles the ether fitting of the Shipway apparatus, but permits oxygen to be given pure by simply a turn of the tap, no disconnecting of tubes being necessary. The apparatus is small, measuring only 9 inches by 3½ inches, and is fitted with a bevelled cork, so that it may be used in any ordinary necked bottle of capacity from four to twenty ounces. A glass indicator is fitted to act as a safety warning should any of the fluid find its way into the outlet tube. The tube for the oxygen is marked "oxy." The apparatus can be supplied by Messrs. Billings and Sons, Ltd., 305, Oxford Road, Manchester. Although designed for the administration of ether, it can equally well be used for chloroform, and here the advantage of being able to give additional oxygen is undoubted.

A Fountain Pen.

The John Hancock cartridge pen, sold by the J. P. H. Syndicate, Ltd. (23A, Old Bond Street, London, W.1), for 25s. with a pocket-case containing three cartridges, is constructed on a principle we believe to be new. It is charged by introducing into the barrel a sealed cartridge containing ink; by screwing down the cartridge as directed the seal is punctured, and on replacing the upper end the pen is ready for use and will write for as long as the ink lasts. The merits of the pen are that a spare cartridge can be carried without the risk of inking clothes, and, as there is no joint at the nib end, can be used without risk of inking fingers. The drawbacks are that the pen is useless without the cartridges, and that these cost 4d. each. The manufacturers claim that 10,000 words can be written with one cartridge, but we have not obtained nearly so many. The contrivance is perhaps better suited to carry in the pocket than for use at the desk.

Nova et Vetera.

SIR ROBERT MACARA, K.C.B.,

SHIP'S SURGEON AND PENINSULAR VETERAN.

During the eighteenth century, from about 1750 to 1780, it was not uncommon for junior officers of the Indian Medical Service to hold combatant commissions in addition to their warrants as assistant surgeons. It was not until 1788 that commissions were given to all officers entering the Company's medical service; before that date all, with the exception of a few seniors, were warrant officers only. It appears clear that no general custom of holding such double commissions as ensign and assistant surgeon, or lieutenant and assistant surgeon, ever existed; but undoubtedly many individuals did actually hold both, and carried out the duties of both positions, either simultaneously or by transfer from one to the other, as required. It was only in the junior ranks that such double duty was permitted. When the turn of an officer holding such a double commission came for promotion, either regimentally to captain or departmentally to full surgeon, he had to make up his mind either to accept the promotion offered or definitely to decline it once for all, and await his turn for promotion in the other branch. Some made one choice, some the other. In one case at least, that of Francis Balfour, a distinguished Oriental scholar, his juniors in the medical service bitterly resented his choice of medical promotion, and several of them submitted petitions to Government against his return to the Medical Department after some ten years of military and political duty. Government decided in favour of Balfour, who subsequently rose to be the head of his service.

The most singular case, however, of an officer doing both military and medical duty is that of Robert Macara, who served the East India Company for nearly twenty years (1784-1803) as surgeon of an Indiaman, while all that time holding a combatant commission in the British army, with gradually rising rank.

Robert Macara was the only child of the Rev. Duncan Macara, minister of the parish of Fortingal in Perthshire from 1754 to 1804, and his wife Susanna Robertson. The date of Robert's birth is not known, but he was baptized at Fortingal on May 6th, 1759, so was probably born early in that year. He matriculated as a student of the United Colleges of St. Leonard and St. Salvator, St. Andrews, at the age of 14, in the session of 1773-74, and went through the arts course for four years, but left the university without taking a degree. On August 17th, 1783, he was gazetted ensign in the 95th Foot, then a Highland regiment. In the following year the regiment was disbanded and its officers placed on half-pay. An ensign's half-pay was small, and Macara had to find some other means of earning his living. He chose medicine, and on March 25th, 1785, sailed from Portsmouth as surgeon of the East Indiaman *Rodney*. Where and how he got his medical education is not known. His name does not appear in the roll of graduates of any of the Scottish universities. As he was 23 when gazetted ensign, he may have gone through a period of apprenticeship before 1782.

Macara made six voyages to the East: as surgeon of the *Rodney*, 1785-86; the *Thetis*, 1786-88; the *Ceres*, 1790-91; the *Valentine*, 1792-93; the *King George*, 1794-95; and lastly, after an interval of six years, the *Marquess Wellesley*, 1801-03. The logs of these voyages are still extant among the marine records of the India Office. These logs are dull and lengthy documents, of over one hundred folio pages each, filled with details of weather, course, and the usual routine of duty at sea. Macara's name is not mentioned in any of them, except in the lists of the ships' companies. The surgeon of an Indiaman must have had very little professional work to do, though, as they often carried drafts of troops on the outward voyage and invalids when returning, there would be a small amount. For the first five voyages Macara drew pay at £3 a month, for the sixth £3 5s. During the long war with France an Indiaman was always on active service. At any time it might meet a French man-of-war or privateer, and passengers and crew alike had to be ready to fight for their

lives, or at least to escape a French prison. An Indiaman, as a rule, was no match for a man-of-war, though they usually put up a good fight, and had some famous successes, notably in Dance's action in the Straits of Malacca on February 14th, 1804, when the Company's China fleet attacked and put to flight a squadron of French men-of-war. One surgeon in the Indian Medical Service, William Spottiswood, was killed in action on August 14th, 1803, when the Indiaman *Lord Nelson*, on which he was a passenger going home to retire, was taken off Ferrol by the French privateer *Bellone*. No such naval encounters, however, broke the monotony of any of Macara's voyages. Several false alarms are recorded in the logs, when the ship was cleared for action, but no actual fighting took place.

As already stated, Macara was placed on half-pay when his regiment, the 95th Foot, was disbanded in 1783. Almost all the battalions numbered above 70 were reduced in that year. After twelve years he was promoted (December, 1795) to captain in the 94th Foot, but did not do duty with it. When he reached England on July 21st, 1803, on the *Marquess Wellesley*, at the end of what turned out to be his last voyage, he found orders awaiting him to rejoin the army. Three weeks before he had been gazetted captain in the 42nd Foot—the Royal Highlanders, or Black Watch. He joined his regiment at once, and his serious military career began, at the age of 44, after twenty-one years of only nominal service in the army. His rank as captain was dated from December 16th, 1795. The *Army List* of 1804 shows him as fifteenth out of eighteen captains in the regiment, that of 1805 as seventh. In November, 1805, he was promoted to major. There were four majors in the regiment. In 1809 he had risen to third, in 1810 to second, and in 1811 he became senior major. He was promoted to lieutenant-colonel in the army on January 1st, 1812, and in April, 1812, got the same rank in his regiment. In 1813 he became senior lieutenant-colonel, and got the command of the regiment when his predecessor, Colonel Sterling, was promoted to major-general and went home, shortly before the battle of Nivelle.

Most of Macara's military service was spent in hard fighting in the Peninsula. The first battalion of the Black Watch went out to Gibraltar in 1805, thence to Portugal in August, 1808. It served under Sir John Moore in the retreat to Corunna and battle of Corunna on January 16th, 1809. From Corunna it returned to England, and served at Walcheren in August and September, 1809. The second battalion landed at Lisbon in July, 1809, and took part in the battle of Busaco on September 27th, 1810, the defence of the lines of Torres Vedras in the winter of 1810-11, Fuentes d'Onoro on May 3rd, 1811, and in the siege of Ciudad Rodrigo and the capture of that citadel on January 19th, 1812.

The first battalion landed at Lisbon on return from England in April, 1812. The two battalions were then combined, and took part in the actions at Salamanca on July 23rd, 1812, Burgos (September 19th, 1812), Vittoria (June 21st, 1813), battle of the Pyrenees (July 25th, 1813), capture of San Sebastian (September, 1813), passage of the Bidassoa (October 7th, 1813), capture of Pampeluna (October 31st, 1813), battles of Nivelle (November 10th, 1813), Nives (December 9th, 1813), Orthez (February 27th, 1814), and Toulouse (April 10th, 1814). In how many of these actions Macara took part cannot be stated with certainty. He received a medal for the battle of the Pyrenees, and clasps for Nivelle, Nives, Orthez, and Toulouse, having commanded the regiment in the last four, and also the Peninsular Gold Cross.

The Black Watch sailed for Ireland in June, 1814, but were among the troops sent to Belgium to meet Napoleon after his return from Elba. The regiment landed at Ostend in the middle of May, 1815. The first general action took place at Quatre Bras on June 16th, 1815, and in that action Macara was killed, commanding one of the best regiments in the British army in the greatest struggle in which that army was ever engaged prior to 1914.

On June 16th the command of the Black Watch passed through the hands of four men within a few minutes—Macara killed, Lieut.-Colonel Dick severely wounded, Brevet Major Davidson mortally wounded, and Brevet Major Campbell. In the campaign the 42nd lost 4 officers, 2 sergeants, and 45 rank and file killed; 19 officers, 12 sergeants, and 216 men wounded—nearly all at Quatre Bras. At Waterloo itself, two days later, they lost only 6 killed and 37 wounded. These were heavy casualties a century ago, though they sound small enough compared to those incurred during the recent war.

The Order of the Bath was reorganized in January, 1815, when all the existing Knights of the Bath (K.B.) became Grand Crosses (G.C.B.), and two new ranks were instituted—Knight Commander (K.C.B.), and Companion (C.B.). Macara was one of the first gazetted K.C.B., on January 2nd, 1815.

Macara was an only child and never married, so he left neither descendants nor near relatives. A joint monument to him and to Colonel Cameron of the Gordons, who also fell at Quatre Bras, was erected on the hill of Tor Alvie, north of Kingussie, in Inverness-shire.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.

The annual general meeting of the Medical Sickness, Annuity, and Life Assurance Society was held at the offices of the company, 300, High Holborn, W.C., on October 6th, under the chairmanship of Dr. F. J. Allan.

Chairman's Address.

The Chairman said that the members must have read with much satisfaction the annual report which had been circulated; it showed the society to be in a healthy and flourishing condition. The society was in its fortieth year, but its conversion from a friendly society into a mutual insurance company had imparted fresh vigour into it. In the sickness and accident branch the additional business was represented by a net increase of £3,550 in annual premiums. The sickness and accident claims amounted to £24,131, which, though £5,069 larger than the previous year, was still within the figure expected; the increase was largely attributable to influenza. Notwithstanding regular advertising in the medical press, it was surprising the number of practitioners who were unaware of the society's existence, and had therefore made no provision against the risks of accidents or sickness. A short illness meant an increased expenditure in the household, but when the illness was of long duration, or led to permanent incapacity, a medical man's savings—if he had any—might soon be dissipated. Letters of thankfulness had been received from many permanently incapacitated members of the society for the regular help afforded them for many years. In some cases their insurance benefit had been their sole income. The life assurance branch, a comparatively new department, showed satisfactory progress; the new business had increased by leaps and bounds each year. Life assurance was the best investment obtainable, since it afforded the professional man an opportunity for providing for his old age, or for his dependents in the event of death, at a relatively small initial outlay. The society had introduced a scheme, which was meeting with appreciation, whereby newly registered practitioners might assure at reduced premiums in the earlier years when income was restricted. A further advantage not obtainable under any other form of investment was that a rebate of income tax was allowed in respect of the premiums paid. Dr. Allan emphasized the advantage of insuring in a mutual company like theirs, inasmuch as the funds belonged entirely to the members, who got the benefit of the lower premiums charged, since there were no shareholders to claim any profits that accrued and no agents to claim a commission on every premium. There was no doubt as to the stability of the company; the funds were invested only in first-class securities. The interest yield was not so high as would be the case if the investments were of a more speculative kind, but the board acted on the principle of safety first. In conclusion, Dr. Allan expressed the board's appreciation of the loyal services of all the staff, and thanked them for their ever-willing co-operation. He moved that the annual report and balance sheet be received and adopted.

The motion, on being put to the meeting, was carried unanimously.

Dr. Charles Buttar and Dr. Harvey Hilliard were, on the motion of Dr. W. T. Evans, seconded by Dr. N. Walmisley, re-elected members of the board of directors.

Messrs. Harber, Sturges, and Fraser were re-elected auditors for the year.

A vote of thanks to the chairman, proposed by Sir William Willcox, seconded by Dr. W. K. Sibley, concluded the proceedings.

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SATURDAY, OCTOBER 11TH, 1924.

CORRELATION OF PRE-CLINICAL AND CLINICAL TRAINING.

THE Association of American Medical Colleges held a meeting at Omaha at the end of last February, and the *Proceedings*, a copy of which reached us a short time ago, contain among the twelve papers several dealing more especially with the problems of the relation between the teaching of the pre-clinical and clinical subjects.

Within the recollection of a generation the teaching of anatomy and physiology in this country was mainly, though not everywhere, in the hands of practising surgeons and physicians; and although the whole-time teacher has now come into his own, those who were taught under the old regime must feel inclined to rub their eyes with a Rip van Winkle-ish sensation at a recent American dictum that the really vital problem of the correlation of the medical curriculum would only "be solved when the so-called pre-clinical subjects were taught by men in sympathy with clinical medicine and the so-called clinical subjects by men who know enough about pre-clinical sciences to apply them; and that until that time comes attempts at correlation must be continued." As a return to the old plan is most improbable, and as the problem is equally important in Great Britain, it may be interesting to hear how the question of bridging the gap between the two divisions of the curriculum is being dealt with in the United States.

That the pre-clinical subjects should be somewhat cut down and brought into a relation of practical application to medical practice is no doubt the fervent belief of most clinicians. Both here and in America there is a move to make the professors of physiology and anatomy consultants to the hospitals, and at Louisville the professor of anatomy is to be consulting radiologist to the hospital, thus recalling the close association at Manchester of the anatomical department of the University with the *x*-ray department of the Royal Infirmary, where Dr. A. E. Barclay's assistant, Dr. Woodburn Morison, is or was also university lecturer in Professor Stopford's department. On the other hand, it is perhaps less easy to interest clinicians in the pre-clinical subjects; at any rate Professor David L. Edsall of Harvard said that he was much struck, in 1923, when inspecting the educational conditions in Great Britain—the dominating country in physiology—by finding that less physiology is taught in the British clinics than in other countries because the teachers are still interested almost solely in pathology in relation to clinical work. After several trials in correlating the two divisions of the curriculum, he comes to the conclusion that little can be accomplished by formal, separate, and self-conscious methods, and that it is wiser quietly to bring this end about by "infiltrating the atmosphere," as indeed had been done in various directions. The teaching of neurology has been combined with that of anatomy for a considerable time in some American medical schools.

In an earnest address describing an experiment in interdepartmental correlation, Dr. Don R. Joseph fully recognizes the danger to which the hard-worked student is exposed when he comes among the keen specialists of the pre-clinical subjects and has to serve many masters instead of, as in the old days of apprenticeship, receiving his instruction from one source. As a preliminary step to connecting the pre-clinical and clinical instruction he would bring the teachers of the respective preliminary studies into closer co-ordination. He suggests, possibly not without serious intent, that if the physiologist (and he is one) and the pathologist attended the lectures of other departments, they would be less likely, in their own courses, to plough a lonely furrow. Although this desperate remedy does not appear to have been put into execution at the University of St. Louis, other plans for correlating instruction have, during the last eight years, been tried; for example, when the physiologist lectured on the circulation or nervous reflexes the instructor in physical diagnosis or the head of the neurological clinic has come in to show the clinical aspects. But after this and other variations had been tried it became clear that such didactic methods did not call on the student himself to make sufficient effort, and that it would advantage him more to delve on his own account. Accordingly three years ago a scheme was inaugurated whereby students, working in pairs, after preliminary instruction how to dig out for themselves information and references from original publications, prepare papers dealing with the anatomical, physiological, pathological, clinical, and therapeutical aspects of the various systems. These papers were read before the other students by their authors and criticized by the teachers; they were then deposited in the library, and the students as a whole were required to abstract and have a knowledge of their contents. This method worked with benefit to both the teachers and the taught.

Dr. O. H. Perry Pepper of Philadelphia records the experiment begun last year in the medical school of the University of Pennsylvania of giving once a week an informal question and answer form of clinic to students in their first year, designed to correlate chemistry, physiology, and anatomy with their future work, thus proving to them the importance of the early subjects, and cultivating from the start their clinical sense and a kindly human attitude towards their suffering fellow men. Another advantage is that it may tend to correct the perhaps unconscious influence of the increasing number of teachers in the preliminary subjects who have not taken medical degrees. The clinics were as far as possible arranged to correspond with the subjects concurrently taught in the elementary courses; thus the physiology of the nervous system was illustrated by a clinic on the peripheral reflexes and on cerebral lesions such as cerebral haemorrhage, and gastric secretion by a case of carcinoma with skiagrams. In these clinics the instructor must remember that the students have not any medical vocabulary, and that words even so apparently simple as "effusion" must be carefully explained; in fact, practically every sentence of a usual hospital history must be interpreted. The classes appealed to the students, but the pre-clinical teachers have so far preserved a non-committal attitude; on the other hand, the clinical instructors concerned have admittedly benefited by having to take a sort of post-graduate course in the pre-clinical

subjects. The same scheme was successfully adopted at Emory University, and was expanded by setting each student to write two essays—one strictly scientific, the other biographical; but in both instances a rather startling recommendation is made to the students as to their method of collecting information. If the thesis is on the chemistry of the thyroid gland the student is advised to write to Drs. Kendall and Charles Mayo for details of their work and life. Such a scheme, if widely adopted, would add terror to distinction, and, indeed, such authorities would be in danger of being extinguished by their own distinction.

The method of making students work up a subject as if for an original paper is by no means new, for it was in vogue at the Johns Hopkins Hospital for more advanced students in Sir William Osler's day; and though it may be useful for the able few it is so time-consuming that ordinary students would acquire a very patchy knowledge of the vast field of medicine.

BOVINE TUBERCULOSIS AND MILK.

It is of considerable significance to note that while tuberculosis in man has been considerably reduced during the last half-century, this improvement has been largely confined to adults. There is little alteration in the mortality rate in children, in whom a large number of the cases are of bovine origin and can consequently be traced to the ingestion of milk from infected cattle. The problems presented by the presence of this disease in these animals are therefore of very deep importance in public health. Their magnitude may be realized when it is understood that probably upwards of 60 per cent. of the milch cattle are tuberculous. Gofton[1] points out that nearly £100 weekly is spent in condemnations of tuberculous animals slaughtered for food in the city of Edinburgh alone.

Tuberculosis, in bovines as in man, takes many forms; and, apart from the actual demonstration of the bacillus in the lesion or in milk, modern methods of diagnosis consist of various modifications of the tuberculin test. The most common method in use is subcutaneous injection. A regular rise in temperature to over 103° F. within twenty-four hours is considered a positive reaction. There are many limitations to this test—the most important being a temporary immunity to it caused by a previous inoculation. An intradermal test consisting of the injection of small quantities of concentrated tuberculin into the skin is also used. This injection is usually made into the subcaudal fold of skin or into the lower eyelid (the so-called intrapalpebral test), and a positive reaction is indicated by the appearance of a sensitive swelling at the site of inoculation between the twelfth and seventieth hours after injection. The third method used is the ophthalmic test, in which a few drops of the tuberculin are instilled into the eye, preferably sensitized by a previous instillation. All these tests have their limitations, and Moore[2] considers that they should never be used except in conjunction with a physical examination. In any case it is obvious that the agent should not be used in unauthorized hands. At present laymen can purchase tuberculin, and by its use, previous to an official test, can render the animal immune to the subcutaneous reaction. The Ministry of Health has not included veterinary tuberculin in the Therapeutic Substances Bill. The wisdom of this omission is doubtful, but the mere inclusion of veterinary tuberculin would perhaps be of little use unless the sale were also brought under control.

The treatment of animals which react to the test presents many problems—economic as well as hygienic. Bang, the great Danish investigator, believed that the pasteurization of milk of reacting animals with no "open" lesions was all that was necessary, and Copenhagen's low child death rate from tuberculosis supports this conclusion. He also believed in the conservation of valuable animals for breeding purposes. In any case, the eradication or even control of bovine tuberculosis is useless unless conditions in farms and cattle sheds are made hygienic. In this respect even more depends on the farmer than on the design and construction of the buildings. Even in badly designed and badly built sheds—and the majority fall within this class—good pure milk can be produced if they are kept really clean. One of the first steps is the efficient instruction of the farmers in veterinary sanitation. Vaccination against the disease has not yet been developed to any great extent, but the recent work of Vallée and his fellow workers in France in this respect is significant. These investigators inoculated some young cattle with an almost avirulent strain of the bacillus in a non-absorbable medium and found that a considerable degree of immunity was developed. Their experiments, however, are not yet completed.

The decreasing mortality from tuberculosis among adults is due to a large number of factors; probably the most important is the increasing attention given to general hygiene and cleanliness. Balfour and Scott,[3] however, have recently drawn attention to another possibility. Statistical investigations have shown that mild infections with the bovine strain of the bacillus—such as are caused by the ingestion of the organism in milk during childhood—may greatly assist in setting up and in increasing the general resistance of the body. Statistics also show that while the adult tuberculosis death rate is declining, the consumption of milk and milk products has been steadily increasing, and the chances of such immunization have become more frequent and probably more constant. The truth of Römer's law—that where tuberculosis is rare it is acute and fatal, but where it is common it is chronic and relatively benign—is finding more and more support. This raises the interesting question of what would be the state of this country in the course of the next few generations if we eradicated tuberculosis without doing so in the rest of the world. We might find ourselves in the same position as those uncivilized lands which have been already devastated by this disease of civilization. Balfour and Scott suggest that possibly the Utopian dream of a tubercle-free milk supply—a different matter from the practicable clean milk supply—would not be desirable if we could ensure a regular optimum dose of the bacilli. The danger from milk is due less to the presence of the bacillus than to the presence of an excessive number of bacilli. If milk is pasteurized at a low temperature, and the process is correctly carried out, it contains only dead pathogenic organisms. The whole problem, however, bristles with difficulties, and only in the close co-operation of the medical and veterinary professions, combined with steady and prolonged research, can we hope to see a satisfactory improvement in the struggle against tuberculosis.

[1] *Veterinary Record*, 1924, n.s. iv, p. 609.
[2] *Cornell Veterinarian*, July, 1924, pp. 275-283.
[3] *Health Problems of the Empire*, 1924, pp. 261-305.

SIR MALCOLM WATSON.

IN recognition of the honour of knighthood conferred upon Sir Malcolm Watson, M.D., D.Sc., on June 3rd, for his services in connexion with the prevention of malaria, Sir Ronald Ross gave a luncheon on October 2nd at the Hotel Belgravia, London. Replying to the toast of his health, the guest gave an account of his work in the Federated Malay States. An early and serious difficulty was the clay soil, which caused a considerable amount of surface water, and in the hill lands the mosquito was able to live and multiply in running water. Surface drainage only resulted in improving the conditions for the growth of mosquitos. A scheme of subsoil drainage was put in hand in 1910, and in consequence the cases of malaria dropped from 6,185 in 1914 to 10 on July 31st, 1924. To illustrate how protecting them from disease increased the efficiency of the labour forces, Sir Malcolm Watson compared the years 1916 and 1917 with 1914, and calculated that 10,798 working days had been saved. This portion of his work related to Klang and Port Swettenham, but subsequently Singapore was taken in hand, with the result that about 35,000 lives had been saved in the last ten years. He compared the work in the Malay States with Assam, which he had visited in the early part of this year, and remarked that little malaria control was effected because of a feeling throughout India that such work was not practicable. Although generally there was but little opportunity at present to carry out the drainage requirements, yet in one case, in a tea-garden, over six miles of drains, representing 300,000 cubic feet, had been cut, with very encouraging results. During his stay in India he visited Mian Mir in the Punjab, where an abortive attempt at malaria control had been made in 1902-3. He hoped that the attempt would be made again before long, but on improved lines. In conclusion, Sir Malcolm Watson paid a warm tribute to the Ross Institute, and declared that through the work of Sir Ronald Ross over 100,000 lives had been saved in the Malay States. Among the medical men who attended the luncheon were Sir William Leishman, Sir David Bruce, Sir Percy Bassett-Smith, Sir William Simpson, Sir James Cantlie, Dr. Andrew Balfour, and Dr. Aldo Castellani.

FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.

THE fifth congress of the Far Eastern Association of Tropical Medicine, held at Singapore in September, 1923, under the presidency of the Hon. Dr. A. L. Hoops, was reported briefly in our issue of November 17th (p. 940), and in more detail in that of December 1st, 1923 (p. 1059). The association was founded at Manila in 1908, where the first congress was held in the following year. The second congress was held at Hong-Kong in 1912, and the third at Saigon in 1913. After the lapse of eight years, due to the war, the fourth congress was held in 1921 at Weltevreden in Java. Last year's congress at Singapore was of exceptional interest and value; it owed much of its success to the active co-operation of the Malaya Branch of the British Medical Association, whose honorary secretary, Dr. J. W. Scharff, acted as secretary and treasurer of the congress. The full transactions of the congress have now been published in a handsome volume with many excellent illustrations.[1] In a brief preface the editors—Drs. A. L. Hoops and J. W. Scharff—express thanks to their colleagues in Singapore, and to members of the staff of the London School of Tropical Medicine, for assistance in its preparation. The opening pages of the volume give full information regarding the constitution and membership of the association. The text of the address of welcome to the congress by Sir Laurence Guillemard, Governor of the Straits Settlements and High Commissioner for Malaya, is followed by Dr. Hoops's presidential address on the prevention of disease in the tropics. Sir Malcolm Watson's opening address on malaria introduces a group of papers on malaria and allied topics by various members of the congress. The sections that follow consist in like manner of grouped papers on beri-beri, ankylostomiasis, plague, and leprosy. The succeeding 500 pages contain the text of thirty-five papers on miscellaneous subjects, and brief reports of such discussions as followed them. In the nature of things most of these communications deal with tropical diseases, but many also are of general interest. The volume ends with a summary of the business transacted during the congress, together with an outline of the scientific meetings and some account of the social functions. This volume of *Transactions* reflects great credit on the editors, whose acquaintance many members of the British Medical Association had the pleasure of making during the Annual Meeting at Bradford last summer.

[1] *Transactions* of the Fifth Biennial Congress of the Far Eastern Association of Tropical Medicine, held at Singapore, 1923. Edited by the Hon. A. L. Hoops, M.D., President, and J. W. Scharff, M.B., Honorary Secretary of the Congress. London: John Bale, Sons and Danielsson, Ltd. 1924. (Cr. 4to, pp. xx + 974; 86 plates, 2 coloured, and numerous charts in text. 40s. net.)

SCIENTIFIC AND INDUSTRIAL RESEARCH.

THE report of the Committee of the Privy Council for Scientific and Industrial Research for 1923-24[1] opens with a note that the estimated expenditure for research work and administrative services for 1924-25 amounts to £328,281, as compared with £276,863 in 1923-24, and £297,437 in 1922-23. Great progress has been made in organizing active intellectual co-operation in scientific matters between different State departments, and it is felt that the time is coming when the Government survey will have at its disposal a scientific personnel competent to recognize the scientific significance of practical difficulties and the facilities existing to deal with them, and whose standing will command acceptance by the scientific heads of the various departments and establishments. Grants have been made to research associations for some time, and during the past year full reviews have been held of nine associations which have existed for about five years. In all cases, except that of the British Scientific Instruments Research Association, further grants are being given on a rapidly decreasing scale. The opinion is expressed that research associations should realize that they must sooner or later look for sole maintenance to the industries they represent. The British Scientific Instruments Research Association has accepted an offer of further grants of £10,000 a year for five years on condition that the industry subscribes annual sums rising from £1,500 in the first year to £2,250 in the fifth. The particular circumstances of this industry called for exceptional treatment, because the advance of science is largely dependent upon the continued improvement of scientific instruments, and because the work of this association is an important supplement to the research undertaken in the interests of national defence. Suitable conditions for close control over the operations of the association have been framed and accepted. In connexion with the Fuel Research Board, proposals are put forward which include the more rapid development of the chemical and physical survey of coal seams. During the year 291 grants were made to individual research workers and students in training, as compared with 304 in the previous year. The standard of the students' work has improved appreciably; a warning note is sounded, however, that great importance is to be attached to the school history of students, and that experience has shown that it is inadvisable to allow science to absorb the whole of the student's attention during the last two years of school life, to the exclusion of the humanities and to the detriment of his general education. A summary of the

[1] H.M. Stationery Office. 1924. 3s. net.

work of the research organizations of the department includes reports of the good progress made during the year at the National Physical Laboratory. The most important event of the year, so far as the Food Investigation Board was concerned, was the sending of the small scientific expedition to Australia to study the conditions of apple transport. The report on this subject was reviewed in our columns on August 25th, 1923 (p. 335), and a special report on the bacteriology of canned meat and fish on January 19th, 1924 (p. 127). Investigation of the changes brought about in beef, mutton, and fish by freezing was continued during the year. It was found that in muscle tissues which has been slowly frozen, fluid separates containing proteins, ferments, and other organic substances in solution. This liquid drips away from the flesh on thawing, whereas when the flesh has been frozen rapidly in air the course of chemical changes is strikingly different. Trials were made with ice containing a disinfectant in low concentration; the results obtained were not very satisfactory, the flesh becoming impregnated with the disinfectant. A Dental Investigation Committee was appointed during the year to initiate and supervise researches from the chemical and metallurgical points of view. Work has been begun on the various alloy systems involved in the production of dental amalgams; this investigation is being carried out at the National Physical Laboratory. Arrangements have also been made for research into vulcanizable rubber and into substitute materials for dentures and adhesive lutes. An investigation by the Fabrics Co-ordinating Research Committee upon the action of fireproofing agents has been started at the Royal Aircraft Establishment. Information relating to methods of waterproofing has been collected, but it was felt that no useful conclusion could be reached until more was known about the physiological effects of wearing garments made from the various types of proofed material; the Medical Research Council has accordingly arranged for a series of experiments on this subject. Developments in the organization of research in other parts of the empire are described in an appendix.

THE OPIUM EVIL.

From discussions in the press and information received from Geneva, it appears that the preparation of the agenda for the two conferences to be held next month with a view to carrying out more effectually the articles of the Opium Convention of 1912 exhibited some divergence of view among the members and assessors of the Advisory Committe on the opium traffic. The reversion of China, which in 1914 was reported to be free from cultivation of the poppy, to being one of the chief, if not the largest, opium-producing countries in the world gave much cause for anxiety. Persia, again, appears either to be lacking in the will or the power to carry out the provisions of the Hague Convention. The Indian Government is criticized for continuing to export large quantities of opium to the Straits Settlements, Borneo, and Hong-Kong, well knowing it is to be used for smoking purposes, which the Indian Government has officially stigmatized as "a social vice." It would appear to be argued in some quarters that if there is a demand for smoking (or prepared) opium in the Far East, and if other countries, such as China and Persia, pander to that taste, it is both justifiable and good business for the Indian Government to do likewise. The findings of the Royal Commission of 1895 are cited as unchallenged, although Lord Morley, when Secretary of State for India, dismissed them as having "failed to satisfy public opinion in this country or to ease the consciences of those who had taken the matter up." The House of Commons twice affirmed its conviction that the Indo-Chinese opium trade was "morally indefensible." That trade is no more, but China has gone back on her undertaking to extinguish opium production within her borders, and is now raising thousands of tons of opium every year. When the Opium Convention was signed at the Hague in 1912 the British plenipotentiaries were instructed to declare that its provisions "shall apply to British India . . . in every respect in the same way as they shall apply to the United Kingdom." It may be legitimately questioned whether the export of thousands of chests of opium by the Indian Government for smoking, or their retail of opium for eating to the native population of India, can be regarded as faithful observance of that official declaration. The Union of South Africa has redirected attention to the abuse of Indian hemp, and the question of its inclusion as a dangerous drug to which the Convention should apply is to be considered. The slow progress made in putting into effective practice a Convention now twelve years old is no doubt disquieting. As those who drafted that document indicated at the time, control of these dangerous drugs at and from the source is the primary object to be aimed at, and so long as countries which produce the opium poppy and the coca shrub either lack the will or the power to arrest a lucrative trade, or are not prepared to co-operate internationally in suppressing the abuse of these narcotics, little progress will be achieved by the multiplication of conferences and committees.

THE PROTECTION OF EYESIGHT IN INDUSTRY.

Correct methods of industrial lighting are necessarily based on consideration of the comfort of the eye. Hence the complete solution of this complex and interesting problem demands the concerted effort of the physicist and the physiologist, supplemented by the practical experience of the workshop. In a report on the problems of industrial lighting[1] issued recently by the International Labour Office (Geneva) it is sought to bring the facts ascertained through these three sources of inquiry into close relation, and a very large measure of success has been attained. The problem is complicated by individual, social, and physical conditions, and any regulations promulgated may be rendered difficult of application by local circumstances which cannot readily be modified. Thus, in the case of natural lighting, climate, the aspect of buildings, narrow passages, badly lighted courtyards—all have an important influence. Yet in each of these fields for reform progress has been made. Research on suitable daylight illumination has been successfully applied to the planning of school premises, and from these experiences it is possible to proceed to the more complicated problem of factory and workshop lighting. In artificial lighting the problem is still more complicated, for inquiry has to be made into the spectra of the various sources of light, the constancy of the light, the heat produced by it, the products of combustion, the influence of ultra-violet rays, and the influence of all these elements on the eye. There is much work to be done, but real advances in knowledge have been made, as is shown by these collated reports. The increasing demands of industrial life demand more and yet more light. So far this has been met by the increase in the specific intensity of the illuminant and the extended use of the gas-filled electric glow lamp; this has brought with it special difficulties, and research is needed to secure that the injurious effects of these new illuminants shall be converted into advantages. Efforts are being made to render the illuminant as uniform as possible through the working areas of shops, and to avoid as far as possible the dazzling effect on the eye of imperfectly screened sources of great brilliance. For this purpose the conversion of direct light into diffused light

[1] *The Protection of Eyesight in Industry.* International Labour Office: Studies and Reports, Series F (Industrial Hygiene), No. 6. Geneva. 1923. Pp. 158. Price 2s. 6d.

by various methods of screening is of importance. There is also no doubt that industrial organizers are beginning to realize the value and the economy of new methods—work is better done, the workers are happier in their work, their health is safeguarded, and accidents are less frequent. There is now an agreed unit of light, which, curiously enough, is exactly equal to the British unit candle power—derived from the Harcourt petance lamp and in current use for over twenty-five years. The qualities of daylight have been investigated, and the value of it in the several seasons of the year set out. The immense difference between summer and winter is shown by graphs, and the necessity of reinforcement of winter light by artificial means enforced. The desiderata of artificial light are said to be that it should be easy to use and not too expensive, and should resemble daylight as closely as possible in regard to immobility, constancy of intensity, absence of variation in the illumination, and spectrum, so as not to cause fatigue or injury to the eyes. If fine work is to be done the spectrum of the artificial light should be as near as possible that of the sun—which is essentially a diffused light—and should not alter the colour of objects. It should not be rich in ultra-violet rays, its brightness should be moderate and its radiant surface sufficient, it should not sensibly raise the temperature, especially in the neighbourhood of the worker's head, and it should not alter the composition of the air by products of combustion. Careful tests have shown that dirty and dusty fitments cause a heavy loss, as do dirty windows. The influence of reflectors for various purposes has been carefully worked out, so that there is no longer any excuse for using shades designed for one type of lamp for another type. The type of lighting and standard of illumination must be adapted to the work. This is shown by the experimental determination of the amount of reflection obtained with work on different soft goods. It is lowest with black velvet, being only 0.37 per cent.; it increases through the dark serges, reaches 10.9 with natural wool, and attains a maximum of 65.9 per cent. with white cloth. Other sections of the report deal with visual acuity and occupational acuity of the eye, with eye-strain and the influence of posture and errors of refraction, and the effect of the various rays of the entire spectrum on the eyes. In one of the appendices is a table of suitable occupations for men and women according to the indications given by their visual acuity. The section on industrial accidents shows how heavy is their incidence among night workers and in the winter months; certain social insurance experts have stated that 25 per cent. of the total number of accidents are connected with insufficient lighting, but no thorough inquiry on this point has ever been carried out. There is a good bibliography. The book has been translated from the French of the original edition by Mr. Leon Gaster, honorary secretary of the Illuminating Engineering Society of London, who has done his work well.

SUPPLY OF MORPHINE AND HEROIN TO DRUG ADDICTS.

The Minister of Health has appointed a committee of nine medical men to advise him in regard to the supply of morphine and heroin (diamorphine hydrochloride) to persons addicted to these drugs. The chairman of the committee is Sir Humphry D. Rolleston, Bt., K.C.B., M.D., President of the Royal College of Physicians of London, and the other members are Sir William H. Willcox, K.C.I.E., C.B., C.M.G., M.D. (Honorary Medical Adviser to the Home Office), Dr. J. W. Bone (representing the British Medical Association), Dr. R. W. Branthwaite, C.B. (Board of Control), Dr. G. M. Cullen (Scottish Board of Health), Professor W. E. Dixon, M.D., F.R.S. (Reader in Pharmacology, Cambridge University), Dr. John Fawcett (Physician to Guy's Hospital), Dr. Adam Fulton (Divisional Medical Officer, Ministry of Health), and Dr. J. Smith Whitaker (Senior Medical Officer, Ministry of Health). The terms of reference to the committee are: "To consider and advise as to the circumstances, if any, in which the supply of morphine and heroin (including preparations containing morphine and heroin) to persons suffering from addiction to those drugs may be regarded as medically advisable, and as to the precautions which it is desirable that medical practitioners administering or prescribing morphine or heroin should adopt for the avoidance of abuse, and to suggest any administrative measures that seem expedient for securing observance of such precautions." The joint secretaries of the committee are Dr. E. W. Adams, O.B.E., and Mr. R. H. Crooke, Ministry of Health, Whitehall, S.W.1, to whom all communications should be addressed.

AT THE CHURCH CONGRESS.

That much troubled and very troublesome lady, Joanna Southcott, whose followers at the Church Congress last year at Plymouth were heaping maledictions on the heads of the bishops because the bishops would not take her cult with sufficient seriousness, reappeared in the spirit last week at Oxford in a more pacific mood. The streets were invaded by numerous sandwichmen, who carried placards declaring, in startling red letters, a "Great discovery by the Panacea Society of the healing of diseases through Joanna Southcott." That is about all that can be got on a placard, and for further particulars the curious were referred to smaller bills which were pressed by ardent ladies into the hands of those attending the twenty meetings of the Congress. These bills only made the mystery a little deeper. They spoke of "Slow but sure deliverance, not miraculous, but by treatment, without money, and without the price of accepting any particular belief, from cancer, nerves, consumption, epilepsy, paralysis, rheumatism, eye and ear trouble, etc., etc., etc." It was added, "Do not write for particulars, but state all your complaints at once in as few words as possible," and an address was given. To see such proclamations along the academic highways of Oxford certainly gives rise to some curious reflections. The Church Congress, of course, is in no way responsible for what goes on at its doors; and on its platform on this occasion faith healing and its associated subjects were mentioned only to be dismissed. One of the readers of papers, the Rev. L. W. Grensted, fellow and chaplain of University College, Oxford, said that "dubious relics, miracle-mongering, hysterical healing, minister not to worship but to superstition." On the other hand, Miss Smithell, licensed woman missioner in the diocese of Chichester, strongly urged the ministry of healing, which, she said, must not be limited to praying for the sick, but must take the sacramental form of the laying on of hands, which became, in the faithful act, not one's own hands, but the pierced hands of Him who was wounded that men might be healed. She begged those responsible for the training of the future ministry to affirm that the ministers of Christ were called to heal just as much as to preach, and, as one who herself had taken part in healing missions, she said that there was nothing like them for uniting Christians together and for bringing nearer the advent of the Kingdom. One also noticed, in another paper, the remark of Lady Maud Warrender, in pleading that clergymen should not restrict their texts to the Bible, but should seek comforting and strengthening words from other literature; that the phrases of M. Coué had a deeply religious significance and a germ quality which might well furnish a basis for pulpit discourses. A subject which has drawn fire at previous Congresses—that of birth control—was touched upon only by one speaker, the Bishop of Woolwich, and by him in terms of emphatic condemnation.

He said that the use of artificial contrivances to prevent conception, such as was advocated by what was euphemistically called the "birth control" school, was clearly opposed to Christian conduct. The purpose of such contrivances, he declared, was to make possible the exercise of a spiritual faculty for the satisfaction of a physical desire only, and to prevent the spiritual consequence for which the faculty was given. Such a practice was the degradation of a sacrament. It was due to a perverted human ingenuity; it was fraught with great dangers, physical and moral; and it was a practice on which it was impossible to invoke the blessing of God because it was entirely subversive of the spiritual significance of His sacramental gift.

THE PREVENTION OF BLINDNESS IN INDIA.

Diseases of the eye are much more prevalent in Asia than in any other part of the world. The teeming populations of the great plains of India and China, their lack of knowledge of personal hygiene, and the climatic conditions, favour the spread of contagious eye diseases, with resultant scarred eyes, and partial, and not infrequently complete, blindness. The prevailing undernourishment of many of the races of India, combined with the stress of long hours of intense sunlight, bring about atrophic changes in the crystalline lens of the eye, with consequent blindness from cataract. Similar conditions are to be found in miniature in Egypt along the Nile valley, and since the latter country is the more visited by Europeans the bad eye conditions are patent to all, and have called for attention early. The munificence of Sir Ernest Cassel has provided for the establishment of central, local, and travelling hospitals, with a competent medical staff, and the effects, both in the prevention of disease and the relief of suffering, have been great even in these few years. The vastness of India makes the problem insuperable to individual effort, or even as a matter of special central organization. But much may be done by the teaching and spread of simple rules of hygiene through the schools and village organizations, and the provision of facilities for visits to hospitals. We have received a letter signed by Sir Arthur Lawley, formerly governor of Madras, by Lord Carmichael, formerly governor of Madras and of Bombay, and by Lady Pearson, calling attention to the work on these lines now being done by the Bombay Blind Relief Association. It has dispensaries and medical officers in four or five districts, and a system of first-aid workers who visit the villages to find operable cases of cataract and furnish simple treatment for sore eyes. It is proposed to form a committee in England to forward this work, and communications may be addressed to Dr. T. Cochrane, World Dominion Press, 3, Tudor Street, London, E.C.4.

The first social evening of the session will be held by the Royal Society of Medicine on Thursday, October 16th, at 1, Wimpole Street. Fellows, members of sections, and their friends will be received by the President, Sir StClair Thomson, at 8.30 p.m. Dr. W. T. Grenfell, C.M.G. (Labrador), will give a brief discourse on "Medicine in a Corner of the Empire" (with lantern illustrations) at 9.30. The library will be open, and various objects of interest will be exhibited. Music, light refreshments, and cigarettes will be provided. Fellows who know of Dominion and foreign practitioners visiting this country are asked to send their names and addresses to the secretary in order that invitations may be sent to them.

A series of museum demonstrations on anatomy and malformation of the heart will be given in the theatre of the Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., by Sir Arthur Keith, F.R.S.. on Fridays, October 17th, 24th, and 31st, at 5 p.m.

Medical Notes in Parliament.

[From our Parliamentary Correspondent.]

Reassembly of Parliament.

Parliament reassembled on September 30th. Despite the arrangement made before the Recess, whereby no business beyond the Irish Free State (Confirmation of Agreement) Bill should be taken till October 28th, controversy soon developed on other subjects, and this week began at St. Stephen's with strong expectations of an early dissolution and general election.

Sir George Newman's Report.

On October 2nd Mr. Wheatley, the Minister of Health, answered questions by Labour members on the annual report of Sir George Newman for 1923. In reply to Mr. J. Guest, Mr. Wheatley said he had read Sir George Newman's statement in that report that many health authorities and medical officers of health muddled on from hand to mouth, the victims of every passing whim or popular stunt, instead of organizing their work as responsible and competent men charged with the duty of directing the public service of their district. Mr. Wheatley said there was no question that the large authorities were, as a whole, discharging their duties satisfactorily. The difficulty was largely due to the passivity of local public opinion on health questions in many areas, and he had this point under consideration. Further difficulty arose from the number and size of many of the 1,800 sanitary authorities, a subject which would fall within the terms of reference to the Royal Commission on Local Government now sitting.

Mr. Guest asked if there were a record at the Ministry of Health of "muddling" authorities and "incompetent" medical officers of health. Mr. Wheatley replied that there was.

Mr. Guest further asked what steps Mr. Wheatley proposed to take, in the interests of the community, to remove such medical officers and to supersede such authorities. Mr. Wheatley referred Mr. Guest to an answer given to Sir Herbert Nield on February 15th. This answer was a statement of the classes of medical officers of health and senior or chief sanitary inspectors whose appointments cannot be terminated without the consent of the Minister of Health.

Mr. Greenwood, Parliamentary Secretary to the Ministry of Health, informed Mr. R. Richardson that Sir George Newman's statement in the annual report for 1923, to the effect that in hundreds of sanitary districts there was a failure to use the facilities which the sanitary law provided, was based upon official records of the Ministry of Health. Mr. Richardson asked whether Mr. Wheatley was prepared to appoint a Royal Commission to inquire into the whole question of the laws relating to public health and housing and into the generally unsatisfactory conditions prevailing in the health service. Mr. Greenwood said these matters would appear to fall within the terms of reference to the Royal Commission on Local Government now sitting.

London University.—Answering questions from Mr. Gilbert and Mr. Edward Wood, on October 2nd, Mr. Trevelyan, Minister of Education, said he had already announced his intention of setting up a new Departmental Committee to report on the steps to be taken to given effect to the report of the Haldane Commission on London University. He could not say when the report of this Committee was to be expected. A previous Departmental Committee had made a first report in April, 1914, but had not resumed its work since the war.

Death Certificates.—On October 2nd Mr. F. G. Penny asked the Home Secretary whether, in the new form of death certificate to be issued, he would make it compulsory for doctors to inspect the body of the deceased before signing, so as to guard, as far as possible, against the chance of live burial. Mr. A. Greenwood, Parliamentary Secretary to the Ministry of Health, replied that no powers were available which would enable such an obligation to be imposed upon medical practitioners, and legislation would be necessary to give effect to the suggestion. Mr. Penny asked whether the Government, if it remained in office, would take steps to bring in legislation to secure these safeguards. No answer was returned.

Sterilization of the Unfit.—Probably for the first time in the House of Commons, the Government was asked on October 2nd to investigate the advantages of sterilization of the unfit. The subject was raised by Mr. Black, who asked whether, in view of the continuously enlarging financial responsibilities accepted by the State with regard to unemployment, invalidity, and old age, he would state the policy of the Government with respect to the procreation of children who, owing to physical or mental deficiencies, became a charge upon the State funds; and whether he was prepared to appoint a Royal Commission to investigate the possibilities of improving the calibre of the nation by restricting the procreation of children to persons possessing a recognized minimum standard of physical and mental efficiency. Mr. Greenwood replied that the Minister of Health did not see his way to recommend the appointment of a Royal Commission on the question. In refusing the suggested Royal Commission, Mr. Greenwood added that the Minister of Health was not aware of the existence of any recognized standards of physical and mental efficiency.

Opening of the Medical Schools.

ST. GEORGE'S HOSPITAL.

ADDRESS BY SIR ISAMBARD OWEN ON "LOOKING BACK AND LOOKING FORWARD."

At the reassembling of St. George's Hospital Medical School on October 1st the inaugural address was delivered and the prizes distributed by Sir Isambard Owen, M.D., F.R.C.P., consulting physician to the hospital, who reviewed the medical changes which had taken place during the last half-century and spoke of possible future developments.

Sir Isambard Owen said that from a study of the origin and development of universities in Europe, one of the impressions left on his mind was that the reputation and success of an academic institution was largely proportional to the degree in which it succeeded in creating a sense of corporate existence among its members and a corresponding corporate pride, involving not only a feeling of fraternity but a sense of common interest in the credit and reputation of the community as a whole. He regretted that so little attention had been given to this subject when the reconstruction of the University of London was undertaken at the close of the last century. It was, indeed, the keynote of the counter-scheme which Sir James Kingston Fowler and he put forward at that time. In speaking of the University he could not forbear making an allusion to the great loss which the University had sustained in the death of its member of Parliament, Sir Sydney Russell-Wells, who was a distinguished St. George's man.

Medical changes during the last half-century (Sir Isambard continued) had been revolutionary. When he himself entered upon medical study fifty-five years ago the teaching of Lister was only just beginning to be followed in England, and at least 95 per cent. of modern surgery was unborn. Ovariotomy was a strictly tabooed subject; cerebral surgery was undreamed of, and the suggestion by a surgeon that as a possible expedient a damaged kidney should be removed was regarded as a professional joke. Preventive medicine was in its earliest infancy; pathology still dealt with dead material alone, and no human eye had then seen a pathological bacillus. The methods of medical education had undergone no less radical changes, for in those days the schools of the London hospitals had only recently completed their organization by absorbing or replacing the private schools of anatomy and chemistry that had previously worked in connexion with them. St. George's had since made itself the pioneer in a further advance, in that it had decided to confine itself to its legitimate fields of pathology, public health, and clinical medicine and surgery. Nothing was more striking than the degree to which laboratory methods had supplemented or even supplanted the older methods of clinical investigation. Some appeared to look forward to a day when the whole conduct of clinical medicine would pass into the hands of the wizards of the laboratory, and the physician would appear only as their expectant client. But it was well to remember that clinical observations in the older sense of the term (provided they were accurately made) and also the conclusions drawn from them (if logically drawn) were every whit as scientific as the work of the chemist and the pathologist.

One branch of medical research had somewhat lagged behind the rest—namely, therapeutics. In saying this he was not questioning the value of the light that pharmacology had thrown on the mode of action of remedies or ignoring the many recent discoveries of new and promising medicinal agents. Our forefathers admitted a certain *vis medicatrix naturae* in theory, but ignored it in practice. That manner of regarding therapeutics still prevailed among the public, and was, in fact, the basis on which the whole fabric of quackery was built. It was, however, when the practical application of the principles of therapeutic science began that the difficulties surrounding it presented themselves. One could hardly wonder, considering all things, that so little had hitherto been accomplished in that direction, and that practical therapeutics was still so largely at the mercy of uncertain, conflicting, or even mutually contradictory individual views. Small wonder, too, that the establishment of a real science of therapeutics, based on exact statistical methods, had been so often pronounced an impossibility. Was this really the case? The three hardest-worked years of his life at St. George's had convinced him at least that there was no impossibility in the matter, granted three conditions: a sufficiently wide field of inquiry, unity of aim and method among its cultivators, and adequate means to retain the services of fully trained observers, working under a single direction.

With the growth of the scientific spirit another new spirit had entered the medical world—the spirit of co-operation in scientific research. In the growth of that spirit, perhaps, one might look for the future hope of therapeutic science, and anticipate that what was deemed Utopian in 1880 might become an admitted possibility of a more modern time. Should such a thing come to pass, he hoped that it might be the fortune of St. George's Hospital to furnish the starting point of the new advance.

MIDDLESEX HOSPITAL.

ADDRESS BY DR. CHARLES PORTER ON PREVENTIVE ASPECTS OF MEDICINE.

The opening of the ninetieth winter session of the Middlesex Hospital Medical School took place in the Queen's Hall on October 1st, when Mr. S. G. Asher, chairman of the school council, presided, and the Earl of Birkenhead distributed the prizes. An address was delivered by Dr. Charles Porter, medical officer of health for Marylebone, who took for his subject, "Some preventive aspects of medicine."

Dr. Porter confessed at the outset that he had a fear that once the medical student got into the wards and began to traffic with disease, to see it and study it and the multitudinous methods adopted with a view to alleviating it, he might come to regard it as inevitable. It was so easy to come to such a conclusion; the system of medical education now in vogue almost drove the student to it. He saw so much of disease, and the various conditions were so beautifully catalogued for him, that it was not to be wondered at if he came to regard diseases and disease groups as established things. Curative medicine he could see; it worked, he saw its results. Was preventive medicine anything more than a conception? If so, then why was the out-patient department always thronged, the wards always full? This was a reasonable and pertinent question. The student had reason for his doubts.

The lecturer went on to explain that if there were no very obvious signs of the operation of preventive medicine, it was because such medicine was very young: so young that what had hitherto been done was little more than a clearing of the ground, though even in these preliminary efforts it was possible to show results, such as the almost complete disappearance of some diseases, the lessened mortality of others. The general death rate for the years 1875-80 was 21.4 per thousand; for 1923 it was 11.6. The speaker gave further figures for various infectious diseases, showing the vast improvement effected during the last fifty years, and also touched on the falling rate of mortality amongst infants.

He next reminded the students that the title of "doctor" which they hoped presently to gain gave them the right and the ability to teach. In particular, every practitioner who accepted service under the Insurance Acts undertook thereby to carry out preventive as well as other duties. He became, as Sir George Newman had said, a "missionary of health," able and privileged to advise the people on the healthy ordering of the home, the formation of personal habit, and the choice of occupation. If the doctors and the people would realize their responsibilities and co-operate for prevention, prevention would follow, and remarkable results, if not as wonderful as those already obtained in respect to infant mortality, would be forthcoming. He begged the students not to confine their energy and enthusiasm to the study of disease. There was much to be gathered from the study of health. A professor of preventive medicine had caused amusement by suggesting that, well or ill, everybody should undergo a complete medical examination at regular intervals, and by the age of 60 should have been completely overhauled seventy-five times. The reason for the amusement was not clear. The speaker believed that the benefit of regular and frequent medical inspection would soon be widely recognized. Already, in fact, large numbers of children, leaving the elementary schools, had received there and at the child welfare centres previously a certain proportion of the seventy-five medical examinations due to them. The unfortunate thing was that these inspections ceased on leaving school. The evidence as to the benefit of these inspections was abundant, but they should not be limited to any age or class.

The Earl of Birkenhead, in presenting the prizes, said that he had been particularly struck by the advice that the man of 60 should have been completely overhauled seventy times. He himself was not yet 60, and as he could recall only two occasions on which he had been overhauled, it appeared that in the course of the next twelve months he ought to be examined about fifty times in order to get himself on the good books of the professor whom Dr. Porter had quoted. Lord Birkenhead went on to express his admiration of the work done by the ancient hospital and its school. When an institution had for so long a period of time maintained honourable traditions, inculcated a feeling of *esprit de corps*, and maintained a high standard of professional efficiency, the community as a whole owed to it no small measure of gratitude. By the continuous opportunity given to young medical men, and to their elders in the profession also, by multiplying the data upon which generalizations could be made, and from which conclusions could be wrested, hospitals were rendering great scientific service. It must be a proud moment for young men when they were first saluted by the title "doctor," but he suspected that they did not take long to realize the wisdom of the teaching of Socrates that no man began to be wise until he realized how little he had mastered of the immense sum total of attainable human knowledge. He wished to add how sincere was the admiration of laymen for the work done at such a hospital and for the continuing conquests of medical science.

A vote of thanks to Dr. Porter was carried, on the motion of Dr. R. A. Young, seconded by Professor W. B. Tuck, and to the Earl of Birkenhead, on the motion of the Chairman (Mr. Asher), seconded by Mr. John Murray.

The Dean (Mr. Alfred Webb-Johnson) mentioned in his report the endowment of the University Professorship of Anatomy by the munificent gift of £10,000 from Mr. S. A. Courtauld. Mr. Courtauld's gift was yet another evidence of the growing realization of the importance of medical education and research. He announced with regret the resignation of Professor Lazarus-Barlow, University Professor of Experimental Pathology, and of Dr. Campbell Thomson, physician to the department for diseases of the nervous system. Among the notable achievements of the year he mentioned the work of Dr. E. C. Dodds on the preparation of insulin; this work, which had resulted in great improvements in the process of manufacture, was due, under Dr. Dodds's direction, to the close collaboration between the physicians of the hospital and the departments of pathology, physiology, and biochemistry.

WESTMINSTER HOSPITAL.

ADDRESS BY MR. H. J. WARING ON THE MEDICAL MAN OF THE FUTURE.

The introductory address to the students of Westminster Hospital was given on October 2nd by Mr. H. J. Waring, M.S., F.R.C.S. Mr. A. E. W. Marshall, a governor of the hospital, presided.

Mr. Waring said that the science of medicine was still in its youth, and the probable manner and direction of its growth was a matter which should have a great interest for those engaged in every kind of medical practice, and perhaps still more for those concerned with medical education. Whether he was right or wrong in his judgement as to the manner in which that growth would manifest itself, there was no harm—probably some good—in letting the mind play with the subject. In any case it was necessary to maintain towards the possible future developments a certain alertness and suppleness of mind. The trend of development might be viewed with criticism and dissent, but there was no room for apathy or indifference.

Two processes were at work in medical investigation and treatment—processes distinct, although in some respects related. The first was the process of specialization. The increase of specialists was to a great extent an inevitable and, up to a point, a desirable process. It was the specialist who could most readily extend the frontiers of knowledge. Nevertheless, the process had its dangers, one of which was that the specialist tended to work in isolation and to concentrate his activities on the one particular branch he had made his own. Unless the specialist could work in direct relationship with members of his profession engaged on other lines this habit of concentration might take the undesirable form of an obsession, so that every problem came to be viewed by him from a particular angle without regard for other aspects. Moreover, specialization had its repercussions in medical education, and in that connexion those concerned with medical education were constantly being met with new demands and new problems. Specialists, naturally, pressed for the inclusion or recognition of particular subjects in the curriculum, and yet, under present conditions, there was not time for many such inclusions.

The second outstanding feature in modern medicine was the recognition of fresh curative and ameliorative agencies and their continual extension. That sweet simplicity which held that to pour down the throat the contents of a bottle was the best, or in some cases the only, method of effecting a cure had become a thing of the past. Gradually all the sciences were being directed to this great task of curing or relieving suffering humanity, but the full significance of all this had yet to be appreciated. It was this recognition of new agencies and extension of old ones which would revolutionize the practice of medicine and surgery, and it had this much in common with specialization: that it made an increasing demand, though of a different kind, upon the time and work of medical students. It was no longer a question of a particular method of treatment or an acquaintance with some particular branch of disease; it was a question of the interpretation of the human body in terms of physics and chemistry. This opened up the necessity of emphasizing more strongly than ever the importance of the so-called preliminary or fundamental sciences in medical education. He sympathized with a certain amount of impatience on the part of medical students in their desire to get more quickly to grips with the actual practice of medicine; nevertheless, he was convinced that the medical student of the future would have to spend more time rather than less upon the fundamental sciences. In the future the value of his work in the wards would be more directly determined by the attention given to the preliminary and fundamental sciences before admission to the wards.

What would be the cumulative effect of this increase of specialization on the one hand and of the constantly increasing employment of new diagnostic and curative agencies on the other? He paused to think of its bearing

on the future of the hospitals. The recognition of the value of the resources of a modern hospital from this point of view was not confined to medical men; the lay public had become aware of it, and instead of reluctance—a survival from pre-Listerian days—the upper and middle classes were showing almost eagerness for hospital treatment in illness. The provision of adequate accommodation for paying patients was now one of the problems confronting the governing bodies both in London and the provinces. Was it reasonable to expect any medical practitioner, however learned, to be able to give in a complicated case anything more than a general diagnosis and then to refer the patient to the appropriate expert or group of experts? For his own part he envisaged an organization of the medical profession in which there would be brought to bear upon a particular case all the resources for diagnosis and treatment which were at the disposal of a great hospital. Some such co-operation and assistance there was already, but it was very often circuitous and indirect.

The length of the course in the medical school of the future would probably be much the same as at present, but its character would be different in certain important respects. With the raising of the standard of science teaching in public and secondary schools, the medical student would enter on his work with a grounding in physics, chemistry, and biology. Physiology would probably be more comprehensive than at present, and would include a fair amount of biochemistry and biophysics. Physics would be carried much higher, and so shaped as to have a definite bearing on subsequent clinical work. He would expect more emphasis to be laid on pathology. On the other hand, the study of materia medica was at present far too detailed and extensive. Altogether, the ideal would be to give the student the best possible training in general medicine, allowing specialization only in those subjects to which he intended to devote himself in practice.

As for the organization of medical practice, Mr. Waring thought that in urban areas the medical man practising alone would gradually make way for a group, partnership, or association, organized on the basis of division of labour, with certain lines of specialization which, however, would not be so marked as to divide the group into watertight compartments. One of the group would certainly be a pathologist. Associated with the group would be an institution for the reception of patients, linked up with other institutions of a similar nature. It was fairly obvious that some radical alteration in national health insurance administration must follow, and for his part he would not be sorry. He was convinced that under a group system such as he had outlined it would be possible to hand over to the profession responsibility for the health of the people. He closed with a word or two about the Navy, Army, and Air Forces. He thought that, in future, arrangements must be made whereby a considerable proportion of the civil medical profession would always be available for immediate service with these forces and would occupy a proper, not a subordinate or inferior, position.

ST. BARTHOLOMEW'S HOSPITAL.

OLD STUDENTS' DINNER.

AT St. Bartholomew's Hospital the opening of the new winter session was as usual marked by no introductory address or other formal celebration, but the annual old students' dinner was held on the evening of October 1st in the Great Hall of the hospital. St. Bartholomew's is fortunate in possessing this fine chamber where the medical officers and lecturers and past students can dine together once a year within the hospital precincts. The chair was taken by Dr. J. H. Drysdale, who has lately resigned the post of physician to the hospital. His immediate supporters at the high table included Sir Clifford Allbutt, Regius Professor of Physic at Cambridge, Sir Archibald Garrod, Regius Professor of Medicine at Oxford, and Sir Anthony Bowlby; Sir William Lawrence and Sir Herbert Cohen, almoners of the hospital; the masters of several City companies, and the senior members of the active medical and surgical staffs. In proposing continued prosperity to St. Bartholomew's Hospital and Medical College, the Chairman referred to some of the most pressing needs of the hospital, mentioning in particular the construction of new operating theatres and of small ward laboratories. He said that new buildings in Giltspur Street have been acquired for the accommodation of the physiology laboratories, to the great advantage of that and other departments of the school. There are now 800 students working at St. Bartholomew's, of whom 100 have entered this session for the full curriculum; in the past year 123 students obtained the English conjoint qualifications. In congratulating the Rugby team on bringing the Inter-Hospital Cup back to Smithfield after too long an interval, Dr. Drysdale remarked on the change which seemed to have come over students since the war; they not only worked harder nowadays, but played harder. The toast was responded to by Sir Herbert Cohen, and the senior physician, Dr. H. Morley Fletcher, who are joint treasurers of the Medical College. The health of the guests was proposed by Sir Archibald Garrod, who prefaced his speech by admitting that he was himself a guest that evening, though he was never likely to forget that for forty years the chief interests in his life had centred round Smithfield. This toast was responded to by Mr. C. J. Ritchie, Master of the Merchant Taylors' Company, and by Sir Walter Fletcher, Secretary of the Medical Research Council, who expressed his pleasure in watching the successful way in which his own hospital was keeping abreast of the demands of modern scientific medicine; he named, in particular, the good work of the "Radium Team." The chairman's health was proposed by Mr. W. T. Holmes Spicer, senior ophthalmic surgeon, who spoke of Dr. Drysdale's devotion to St. Bartholomew's and its students, and the regard in which he is held by colleagues and pupils. The toast was received with enthusiasm. Dr. Drysdale ended his acknowledgement by asking the company to drink the health of the secretaries of the dinner—Sir Charles Gordon-Watson and Mr. Reginald M. Vick—who each briefly replied, the former taking that opportunity to give an account of the proposals for the St. Bartholomew's war memorial.

ST. MARY'S HOSPITAL.

ANNUAL DINNER.

THE annual dinner of the past and present students of St. Mary's Hospital Medical School was held on October 6th at the Connaught Rooms, Great Queen Street. The chairman, Dr. E. M. Callender, C.B.E., was supported by Sir Humphry Rolleston, President of the Royal College of Physicians, Mr. A. R. Prideaux, chairman of St. Mary's Hospital Board, Sir William Willcox, Sir Anderson Critchett, and the Mayor of Paddington, amongst many others. Proposing the toast of the continued prosperity of St. Mary's Hospital and Medical School, Dr. Callender gave many interesting reminiscences of "forty years ago." He recalled the consternation caused in the dispensary by the house-physician who, at the behest of his Latin-loving chief, when in need of a tent and steam kettle for a bronchitic patient, commenced his prescription "*habeat tabernaculum.*" Affectionate and humorous memories of Sir William Broadbent, Braxton Hicks, Walton, Edmund Owen, and others, blended with tales of hospital life in the days before the period of expansion had set in. Mr. A. R. Prideaux, replying, gave an account of the present happy position of St. Mary's Hospital in that it was doing something more than paying its way. The equipping of the new *x*-ray department and the installation of new lifts was a most satisfactory achievement, and he now held out the possibility of improvements and extension of the operating theatres. Dr. C. M. Wilson, dean of the medical school, spoke of the loss they had sustained in the departure of Mr. Clayton Greene and Dr. E. H. Kettle. He said that the entry for the current year was particularly good in all respects, and the prospect for the future very bright. Sir Anderson Critchett, proposing the health of the chairman, referred to the great honour that had been conferred upon Dr. Callender by his being elected president of the Medical Society of London.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

Opening Session.

The first meeting of the Royal Commission on Lunacy Law and Administration and Mental Disorder was held at Old Palace Yard, Westminster, on October 7th. The Right Hon. H. P. Macmillan, K.C., presided. The names of the members of the Commission and the terms of reference were published in last week's Journal (p. 633).

Sir Frederick Willis, chairman of the Board of Control, was the first witness, but Dr. C. Hubert Bond and Mr. S. J. Fraser Macleod, K.C., two of the Commissioners, sat with him and also answered questions.

The Chairman, Mr. Macmillan, said that he was anxious at the outset to appreciate the principles upon which lunacy law had developed. It seemed to him to exhibit the reconcilement, as far as possible, of the liberty of the individual with the protection of the public against an abnormal individual and of that individual against the consequences of his abnormality. On the medical side there had been a progressive endeavour to ameliorate the conditions under which those of unsound mind were detained, and to aid their recovery.

Sir Frederick Willis said that he believed the work of the Board of Control had largely resulted in bringing mental hospitals into their present state of efficiency, but, of course, there had also been a general growth of a better spirit throughout lunacy administration. In addition to the Board, the Lord Chancellor had an ancient jurisdiction, more particularly with regard to the property of insane persons; the Home Secretary had jurisdiction over criminal lunatics, and the Minister of Health had a general responsibility for the provision of mental hospitals. The patients with whom the Board had to deal resolved themselves into two categories: private and rate-aided. On January 1st the total number of persons under care for mental disorder in England and Wales was 130,334, of whom 103,892 were in county and borough mental hospitals, 11,323 in Poor Law institutions, 2,139 in registered hospitals (institutions not run for profit), 1,187 in metropolitan and 1,610 in provincial licensed houses, 171 in naval and military hospitals, 785 in criminal lunatic asylums, 5,266 in hospitals under the control of the Metropolitan Asylums Board, and 417 in private single care; in addition 3,544 insane persons were receiving outdoor relief. Boarded-out cases, which were very few in number, were included in the first of these categories, the names of the patients still remaining on the books of the mental hospitals. The licensed house had been discouraged. It had been enacted that the number of these institutions should not exceed the number in existence at the time of the passing of the Act in 1890, and as the licences lapsed the number diminished.

Mr. Macleod, on the Chairman's request, gave an account of the process by which respectively a private patient and a rate-aided patient came under detention. With regard to medical certificates, two were required in the case of a private patient; these must be given by qualified medical practitioners who were not related to the applicant for the order, and whose examinations were of recent date (within seven days) and had been made separately. The certificate must state what had been observed by the medical man himself as distinct from what he had been told by other people. One of the certifying medical men should be the usual medical attendant of the patient, or if this was not the case the fact must be stated on the document and the reason given. When these documents reached the Board of Control they were subjected to a careful scrutiny, first by an experienced clerk and then by a Commissioner. Sometimes the certificates did not contain a sufficient statement of the facts observed by the certifier, and in that case they were sent back, and if they could not be amplified or amended the order for detention fell to the ground. The Commissioners also sometimes formed the view that the facts which the certifier stated as having led him to the conclusion that the person was of unsound mind did not justify that conclusion, but this did not occur in any substantial number of cases. He supposed that the documents which came to the Board related, on the average, to about 100 fresh cases a day; in perhaps 12 or 20 cases the documents would be put aside for further scrutiny, generally, however, on some technical point, though a few came in for criticism on substance. A certificate in need of amplification or amendment was sent back to the certifying doctor, who was entitled again to see the patient, now in an institution, but not to add to the certificate matters arising since the date of his original examination.

The Chairman asked whether, in the event of medical certificates not being amended to the satisfaction of the Board, the Board directed the discharge of the patient. Sir F. Willis said that in that case the Board told the medical superintendent that the case should be discharged, and it was discharged; but this happened rarely, probably not once in a year.

Dr. Bond said that many medical men found great difficulty in certification. Often it was impossible for the Commissioners examining the document to make out whether the certifier had himself observed at the time of examination the facts which he related. In other cases the facts set down did not necessarily indicate unsoundness of mind. The scrutiny of the Board was directed to the whole certificate, but the accent was on the paragraph relating to the facts observed at the examination. Of course, the Commissioners knew from experience that in certain difficult cases it was not possible to base the decision on the facts observed at the time of examination, and here the facts communicated to the certifier by other people must also be taken into account. The Chairman asked whether the forms were subjected to a purely medical scrutiny. Dr. Bond said that this was not the case, but if one of the legal Commissioners was examining the forms and came upon a medical issue he referred it to his medical colleague. Dr. Bond added that he thought the prescribed form could be said to be successful. If there was difficulty it was due to the fact that medical men did not always grasp the essential of certification—that of precisely setting out the facts on which conclusions were based. But there had been improvement, especially since some of the medical bodies had established diplomas in psychological medicine, and this was reflected in the certificates.

The Chairman remarked that the profession had now been well educated in filling up forms of all sorts.

Dr. Bond went on to give particulars of the reports which had to be furnished by the medical superintendent after the admission of the patient. The first report had to be furnished not later than seven days nor earlier than two days after admission. A diagnosis was not asked for, but a description of the case, and, in particular, a note of any marks of bodily injury.

Mr. Macleod then described the legal process in the case of rate-aided patients. Here any magistrate could give the order (not a selected justice, as in the case of the private patient), but he was required to see the patient (the selected justice need not do so), and there was only one medical certificate instead of two. The private patient was apparently protected more than the rate-aided patient because it might be imagined that there were occasionally interests at work to deprive a person who would be in the position of a private patient of his liberty, and these interests would not act in the case of the rate-aided patient. In the experience of the Board the safeguards for the rate-aided patient were, however, sufficient. All the documents relating to both classes of patients were scrutinized in the same way. A report at the end of a month's detention, which was required in the case of the private patient, was not required in the case of the rate-aided, but the requirement as to yearly reports applied to all patients. About 800 reports a week were received by the Board and carefully scrutinized.

The Chairman said that apparently these reports were the justification for the continued detention of the patient, and he asked whether it was ever found that the special reports did not justify the original certificate. Mr. Macleod said that he did not recall such a case. The Chairman remarked that the importance of the periodical reports was that they served to bring up a case formally for review. Sir F. Willis said that the real safeguard for the patient was not any system of documentation, but the high character and ability of the officers of mental hospitals. Dr. Bond added that in any case in which there was a scintilla of doubt the Board called for a further report after a definite period, and this was closely examined.

Mr. Macleod went on to describe the visitation system. County and borough mental hospitals were visited once a year by two Commissioners as well as, once every two months, by members of their own visiting committees. The guardians had a right, and were encouraged, to visit cases coming from their union, but there was no obligation. Licensed houses were visited twice a year by the Commissioners and four times a year by visitors appointed by justices at quarter sessions. Registered hospitals were visited under statute once a year by the Commissioners, but in fact twice. The Lord Chancellor's Visitors visited those patients who had been judged of unsound mind by inquisition and those in whose property the Lord Chancellor had some concern. The total number of persons visited by the Lord Chancellor's Visitors would be about 700. The statutory visit of the Commissioners to the county and borough mental hospitals must be made by a legal and a medical Commissioner together, and must be without previous notice. He described the full inquiries which were made. Every patient was seen and spoken to, and complaints were received, but it was more customary, especially in the case of convalescent patients, to receive appreciations.

The Chairman asked what opportunities the patients had for private interviews with the Commissioners. Mr. Macleod said that private interviews were always given if asked for, except in the case of dangerous patients.

Dr. Bond, in reply to a question by Sir David Drummond, said that the time given to the visit was certainly not sufficient to satisfy the aspirations of a medical Commissioner, but he thought the time was sufficient to make the visit effective. More and more the Commissioners were appealed to by the officers for guidance and personal advice in the conduct of the hospital. Every patient was spoken to, but, of course, a large proportion of patients were suffering from secondary or other forms of terminal dementia, and in these and some other cases of more acute excitement it was seen to be quite useless to attempt to draw the patients out. Therefore it was possible to see a very large number of patients in an institution in a comparatively short time.

On the second day of the inquiry evidence was given by the Ministry of Health and the Lord Chancellor's department.

THE PROBLEM OF MATERNAL MORTALITY.

Conference in London.

An interesting conference, organized by the Post Certificate School, was held on October 6th at the Royal Society of Arts, when the subject discussed was "How to reduce the maternal mortality by the co-operation of all the health services concerned."

Dr. J. S. Fairbairn, who took the chair, indicated that the subject had been suggested by the recent report by Dr. Janet Campbell of the Ministry of Health; the speakers, for the most part, took portions of this report, and dealt with them from some particular point of view. The importance of ante-natal care was emphasized repeatedly, and Mr. Aleck Bourne urged that it was needed by every pregnant woman, whatever her class or rank. Mr. Bourne described the ideal ante-natal clinic as he conceived it, staffed by obstetric specialists, and acting as a consultative centre for the general practitioners in its district; but it was pointed out by Dr. H. Scurfield that outside London ante-natal work was very deficient. In rural districts this was especially the case, natural shyness appearing to be a terrible obstacle. Mr. Bourne had suggested that if a woman refused ante-natal supervision no practitioner should undertake the case, but Miss Liddiard, of the Mothercraft Training School, put the matter in a more practical form by insisting that every woman ought to be educated to demand ante-natal care during her pregnancy.

In a letter from Sir Francis Champneys, which was read by the chairman at the beginning of the meeting, one of the points raised was that in every case of death in childbed the person actually concerned in the delivery of the woman should be the subject of studied attention. Speaking from the point of view of the general public, Mrs. Bruce Richmond said that, while midwives were bound by their regulations to maintain a certain standard of cleanliness and asepsis, doctors were often very lax in this respect. She suggested that the General Medical Council should bear this point in mind; and in this respect Sir Francis Champneys's suggestion was particularly pertinent. When a woman died in childbed as much investigation was required as if she had died from small-pox was another point urged by Mrs. Bruce Richmond in the course of a very effective speech; she pleaded for "better doctors, better midwives, and more of them," insisting that midwives ought to receive a more honoured place as members of an important profession. Speaking as a general practitioner, Dr. J. W. Wayte of Croydon described the co-operation necessary between the midwife and the doctor. All midwives should be fully trained, and a full nurse's training was also desirable—a point emphasized by later speakers. He urged that in every confinement a doctor and a midwife should both be available, although both need not necessarily be present. It was obvious that this would necessitate further financial provisions, and Dr. E. F. Palgrave of Ealing made some reference to this in dealing with the work of the local supervising authority. He deprecated the flat-rate system of payment under the 1918 Act of doctors called in by midwives, but he also dealt with the wider aspects of the co-operation between the doctor, the midwife, and the local authority, insisting that this co-operation must be close and cordial. In the inspection of midwives the instructional element should always be kept well to the fore, and "refresher" courses were eminently desirable. The "handywoman" was severely criticized by several of the speakers, and it appeared obvious that further legislation was desirable to curtail her activities, if not to abolish them completely.

A novel aspect of the problem of maternal mortality was dealt with by Dr. E. W. G. Masterman, who described the increasing activity of Poor Law institutions in providing facilities for confinement cases. In the present state of the housing problem much of the danger of sepsis could be avoided by arranging for confinements to be dealt with in hospitals, and several interesting schemes were indicated for removing the stigma which hindered the use of the many beds in Poor Law institutions which were available for maternity work. Ante-natal care, close co-operation between the authorities and services concerned with maternity work, and provision of increased hospital accommodation, would, however, all be useless without the educating of the public to realize the importance of the problem of maternal mortality. This was the text of Miss Liddiard's remarks, who urged that the present generation ought to be approached through women's institutes and clubs throughout the country; the coming generation of mothers should receive instruction at school in mothercraft and all it meant. Fathers, also, should receive instruction, as was urged by several of the later speakers. Miss Liddiard suggested that the barrier of shyness might be broken through in rural districts if midwives would settle in one place, and by their devoted lives seek to win the confidence of those around them. All women must be encouraged to view motherhood in its proper light as "the grandest of the professions."

During the very interesting general discussion the importance of holding autopsies on all women dying in childbed was stressed by several speakers. These, it was argued, should be conducted by experts, and in this way much useful information might be brought to light. Another point raised was that of the need of closer co-operation between the medical student and the midwife when the former was working on the "district." Did an inexperienced student actually do harm? This and other questions would probably be answered, as the chairman remarked in his summing-up, if in every case of death during childbed the person who actually delivered the woman could be ascertained.

Dr. William Paterson of Willesden represented the British Medical Association at the conference, which was well attended by doctors, midwives, health visitors, and others. The stimulating discussion should help towards promoting the necessary co-operation between all the health services by which this great national problem of maternal mortality may one day be solved.

England and Wales.

Cardiff Royal Infirmary.

Sir Ewen Maclean, M.D., senior gynaecologist to the Cardiff Royal Infirmary and professor of obstetrics and gynaecology in the Welsh National Medical School, has presented a thousand guineas for the endowment of a bed in the Thompson ward of the infirmary, in memory of his mother, who had always been keenly interested in the institution. No conditions are attached to the gift, but Sir Ewen Maclean hopes that in the expenditure of the money the council will be able to give preference to any special requirements of the obstetrical or gynaecological departments.

Retirement of Dr. E. W. Hope.

In a report presented to the Liverpool Corporation in the autumn of 1873 by Dr. William Trench, the medical officer of health, it was stated that no death from typhus

fever had occurred in the previous week in Liverpool, an exemption which had not happened for twenty-five years, the last instance of typhus not appearing in the weekly mortality returns having been as far back as 1848. The editorial comment in the journal[1] from which this information has been gleaned was:

"All who are acquainted with the insanitary condition of some parts of this populous town will congratulate Dr. Trench upon this striking proof of what can be accomplished by energetic and constant medical inspection."

Ten years later Dr. E. W. Hope was appointed deputy medical officer of health to Dr. Stopford Taylor, who succeeded Dr. Trench, and on the retirement of Dr. Taylor, in 1894, Dr. Hope was elected senior medical officer. For more than forty years, therefore, he has been completing the reforms begun by his predecessors, and has initiated many others with a zeal and perception of the future needs of the community which stamp him a reformer of the first rank. In his annual report for 1921 he gave an account of the sanitary condition of the city as he found it in 1833. The population was 540,000 and the deaths in that year numbered 15,000. In 1921 there were less than 12,000 deaths among a population of over 800,000. In the earlier year there were 20,000 houses and 24,000 cellar dwellings wholly unfit for human habitation. Receptacles for refuse consisted of deep pits or trenches, extending from one end of a street to the other, and it was found to be unsafe to empty them during the summer months, since the process was invariably attended by an excessive destruction of infant life. There was no municipal isolation hospital, the workhouse hospitals being the only institutions available for the isolation of infectious disease. The sanitary staff was quite inadequate and the personnel had had no special training in their duties. There was no port sanitary administration and no check or hindrance on the importation of infectious disease. No side of Dr. Hope's administration has been carried out more carefully and energetically than that connected with the port, and he is quite justified in his statement that—

"the Liverpool Port sanitary organization is to-day as complete as careful organization can make it, and thoroughly fulfils the needs of those important international obligations which have been entered into by most of the maritime nations, who recognize that the public health is an important international matter and not a mere local affair."

The supervision and control of food supplies was negligible, the medical inspection of school children was unthought of, and no special attention was paid to the welfare of young children or of their mothers. In 1883 the Society for the Prevention of Cruelty to Children was established in Liverpool, and it subsequently became the National Association. Dr. Hope truly states that the title of the association and the title of the Child Welfare Association of to-day sufficiently indicate the advance in public opinion, in regard to children, in the interval. The gulf between the prevention of actual cruelty and the active promotion of child welfare is a wide one. Very early in his public health career Dr. Hope recognized the importance of creating a favourable public opinion in support of public health reforms, and much of its success is due to his carefully worded reports and to the sound advice contained in them. He would be the first, also, to acknowledge the support he has invariably received from his professional colleagues, not only in Liverpool but throughout the country. He is an ex-president of the Liverpool Medical Institution, and in 1913 was president of the Public Health Section of the British Medical Association at the Annual Meeting at Brighton. In 1912 he was president of the Society of Medical Officers of Health, when he delivered an opportune address on "the expanding scope of sanitary administration." We understand that Dr. Hope is not relinquishing his association with the Liverpool University as professor of hygiene, or with other universities and examining bodies as an examiner in public health.

After-care of Mentally Defective Children.

The City of Birmingham Education Committee has had a subcommittee devoted to the after-care of mentally defective children since 1901. The report for 1923 has now been issued.[1] The duty of the committee includes the keeping of a record of the subsequent histories of former pupils of the special schools for the mentally defective in the city and assisting them to find employment. It also looks after children notified under the Mental Deficiency Act but who are not in institutions. Last year it supervised 803 such children. Of these, 350 had been in no school; they were mainly idiots or imbeciles, but there were some who were deemed educable for whom accommodation had not been found. In some districts of the city children have to wait fifteen months to two years for a place in a special school. Nearly 2,000 male persons who were over school age were under observation; about 35 per cent. were doing remunerative work, 13 per cent. were at home and useful, 11 per cent. were in institutions, and 25 per cent. had been lost sight of. There were fewer women, and a greater proportion doing useful work at home. The report states that: "Some people have been known to allege that all criminals are mentally defective, and others that all mental defectives have criminal tendencies, but they fail to substantiate their statements. An examination of the records of the committee, extending as they do over a period of twenty-one years, and relating to more than 3,000 defectives, shows that except for certain cases of immoral conduct, and others of petty thieving, criminal offences have been few."

Certain of the female defectives are quite unable to protect themselves from sexual dangers, and during the past year four such persons had given birth to an illegitimate child. The wisdom of providing adequate care in suitable institutions at a sufficiently early age for young women who need protection in this direction is manifest, and the expenditure involved would be true economy. Most of the cases under the care of the committee fall within the ages of 16 to 27 years. Records are kept of marriages and progeny; 185 families have been noted. Most of the children are very young at present, but it has already been recorded that the three children of one of the men appear to be mentally defective, and of the four children of one of the women two are attending a special school and the two younger ones are said to look far from normal. Trustworthy evidence on these lines would help to convince public opinion of the necessity for denying parenthood to the mentally unfit.

[1] *Public Health*, vol. i, 1873, p. 185.

[1] Report of the Special Schools After-care Subcommittee of the City of Birmingham Education Committee, July, 1924.

Scotland.

Scottish Board of Health Consultative Councils.

THE Scottish Board of Health announces that it has made the following new appointments to its several consultative councils:

Medical and Allied Services: Professor J. R. Currie, M.D., Glasgow University; Mr. A. Gofton, F.R.C.V.S., Chief Veterinary Inspector, Edinburgh; Dr. G. R. Livingston, Dumfries; and Professor B. P. Watson, M.D., Edinburgh University.

National Health Insurance (Approved Societies' Work): Mr. J. G. Barry, Glasgow; Miss Jean Coutts, Aberdeen; and Miss Jobson, Stirling.

Local Health Administration and General Health Questions: Bailie P. J. Dollan, Glasgow; Mr. A. Findlay, Aberdeen; Mr. Hugh Fraser, Inverness; Bailie Simon G. Fraser, Dundee; and Mr. M. A. Reynard, Clerk to the Glasgow Parish Council.

Highlands and Islands: Mr. J. G. MacDonald, Inverness; and Mr. Hugh Miller, Stornoway.

Welfare of the Blind in Scotland.

The second report of the Scottish Advisory Committee on the Welfare of the Blind was issued last week.[2] The report, which covers the period 1921-24, is signed by Sir David Paulin (Chairman) and Sir William Reid (Vice-Chairman) on behalf of the committee, which includes representatives of public authorities, voluntary agencies, and blind workers. The medical profession is represented by Dr. George Mackay, consulting ophthalmic surgeon to the Edinburgh Royal Infirmary. This committee was set up shortly after the passing of the Blind Persons Act, 1920, to advise the Scottish Board of Health on the care and supervision of the blind in Scotland. As practically

[2] H.M. Stationery Office, 120, George Street, Edinburgh (price 1s.)

every question of importance affecting the interests of blind persons has been before the committee, the report is in effect a review of the problem of the care of the blind in Scotland and an account of what is already being done. There are, the report states, 6,054 blind persons in Scotland on the Central Register, kept by the Board of Health. The gradual increase in the number of blind persons registered is attributed to the greater interest in the blind since Government grants were provided for voluntary agencies and the responsibility for the welfare of the blind was placed on local authorities. Of the total number of registered blind, 399 are under 16 years of age, and 3,627 are over 50; 3,650 blind persons are unemployable. The committee records with pleasure the striking decrease in the number of blind children under 5 years of age—from 48 in 1920 to 15 on April 1st, 1924.

"It may be assumed that this is to some extent due to the energetic measures that are being taken generally by public health local authorities to secure the prompt notification and treatment of cases of ophthalmia neonatorum and also for the systematic and effective treatment of persons suffering from venereal diseases."

The report discusses and makes recommendations on the education and technical training of the blind, the wages of blind workers, municipalization of workshops, the disposal of goods made by the blind, home work, home teachers (their training and qualifications), residential homes, the medical certification of blind persons, and methods of dealing with those who are incapable of working or being trained. Many of the recommendations of the committee have been adopted by the Board of Health and are now the accepted policy in Scotland. The committee, by a majority, agreed to recommend that as a general principle the municipalization of workshops for the blind is not at present desirable. The committee disapproves of the Blind Persons Act (1920) Amendment Bill, as drafted, which is at present before Parliament, and an alternative scheme of amending legislation is substituted as a "substantial solution of the whole problem of the blind." In the committee's opinion blind workers in institutions are already substantially provided for and new legislation must deal principally with the problem of the unemployable and necessitous blind. It recommends that a graduated compensation allowance of not less than £1 a week should be granted to blind persons within a prescribed means limit, and that this should be paid to the capable and incapable blind alike, two-thirds of the cost of the compensation allowance being met by the State and one-third by the local authorities. It recommends also that power should be taken to provide that the standard minimum wage to blind workshop employees should be not less than that paid to unskilled municipal workers in the district, on condition that the recipients should be qualified workshop employees who have undergone a course of technical training and are capable of earning a reasonable wage. The other recommendations deal with the granting of powers to local authorities in Scotland to promote arrangements for the prevention of blindness, the necessity for the approval of the Scottish Board of Health to the registration of charities for the blind, and the empowering of the Board to compel local authorities to combine where necessary for the purposes of the Act, and also to compel local authorities to enforce the provisions of the Act.

EDINBURGH ROYAL INFIRMARY.

At a meeting of the board of managers of the Royal Infirmary on October 6th, Lord Provost Sir W. L. Sleigh presiding, several vacancies on the visiting staff were filled up. Dr. Andrew Rutherford was appointed assistant physician; Messrs. J. J. M. Shaw and F. Gordon Bell were appointed assistant surgeons; Dr. Robert Aitken was appointed assistant physician for diseases of the skin; Dr. James Young was reappointed assistant gynaecologist. It was stated that 1,482 patients had been treated during the past two weeks in the institution and 1,796 new cases had been treated in the out-patient department. The number of cases awaiting admission to the infirmary on October 1st was 1,684.

GLASGOW POST-GRADUATE COURSES.

The Glasgow Post-Graduate Medical Association has arranged a series of weekly demonstrations for medical practitioners in the various hospitals of Glasgow, commencing on November 5th and continuing until May 27th, 1925. Some short special courses will also be conducted. Further particulars can be obtained from the secretary of the association, the University, Glasgow.

WEST OF SCOTLAND FOREIGN SERVICE MEDICAL CLUB.

The West of Scotland Foreign Service Medical Club consists of medical men who served overseas during the great war; all its members, we are glad to know, are also members of the British Medical Association. The sixth annual meeting and dinner of the club will be held in the Grosvenor Restaurant, Gordon Street, Glasgow, on the evening of Tuesday, October 28th. The honorary secretary is Dr. David Shannon, 26, Woodside Place, Charing Cross, Glasgow, C.3.

Ireland.

THE ROYAL ACADEMY OF MEDICINE.

DURING the session of 1923-24 the Royal Academy of Medicine in Ireland consisted of 193 Fellows, 13 members, and 26 student associates, an increase of 20 Fellows and 6 members over the previous year. The accounts for the session have been audited, and the financial state of the Academy is shown in the balance sheet appended to the annual report. The total income for the year, including a balance of £40 carried forward from the previous year, amounted to £483, and the expenditure to £407. By the kindness of M. Blanc, the French Consul, a cinematograph film illustrating events in the life of Louis Pasteur was lent to the Academy, and on December 11th, 1923, the Academy entertained a large number of visitors to view this interesting film on the first occasion that it was shown in Ireland. The council records with deep sorrow the deaths during the session of three honoured Fellows of the Academy: Wallace Beatty, Alexander O'Sullivan, and Sir Andrew Horne. The urgent need for the provision of facilities in Dublin for research in connexion with medicine and the allied sciences was brought before the council, and a conference of the various licensing corporations in Ireland was invited to meet the members to discuss the matter. At that conference a scheme for the establishment of a research institute was drafted, and the draft has been submitted to the various corporations which were represented. As soon as the approval of these bodies has been received it is proposed to submit the scheme to the Government. The council has good grounds for believing that the scheme will be adopted, and hopes that in the next report it will be possible to speak of the actual establishment of the institute. During the session there were 27 sectional meetings of the Academy, at which the attendances were: Fellows 637, members 55, associates 161, and visitors 338, or a total of 1,191, as compared with a total of 941 in the previous session. The plan of holding a combined meeting of the sections of medicine and surgery was again adopted during the year, and on January 25th Mr. D. P. D. Wilkie of Edinburgh opened an interesting discussion on "Jaundice." This meeting was well attended. On February 29th Mr. James Sherren of London read a paper before the surgical section on "Diseases of the stomach and its surgical treatment." The paper evoked great interest among the 100 persons who were present at the meeting. On May 5th Sir Leonard Rogers, F.R.S., by invitation of the council, read a paper before a special meeting of the Academy on "Leprosy research and its relation to tuberculosis."

HEALTH OF BELFAST.

Dr. Bailie, the Medical Officer of Health of Belfast, has just issued his annual report for 1923: it is especially interesting because in that year the mortality was the lowest on record, and because it includes the first report of the School Medical Service. As no census was taken this decennium, the

figure for the population is an unreliable estimate after fourteen years from an actual count, and so all figures calculated from the population are more subject to error than if only a few years had elapsed. The death rate for 1922 was calculated at 14.8 per 1,000; that for 1923 at 13.8—the actual number of deaths being 7,117. The births numbered 10,426, or 25.0 per 1,000 in a population of 429,000 as estimated by the Registrar-General. Only 4 deaths were caused by typhoid, but 308 were due to measles and whooping-cough. A decrease of 0.2 per 1,000 in deaths due to phthisis is also very satisfactory, considering the steady fall during the last twenty years. When one considers the mortality rates of the last decennium of last century there is every cause for sincere congratulation.

Belfast School Medical Service.

The first annual report of Dr. T. F. S. Fulton, chief school medical officer, is published with Dr. Bailie's report, and gives a survey of the work of the School Medical Service under the new authority. During the year 76,700 inspections were made, and the service appears on the whole to have won the approval of the parents. The poor condition of the schools had from time to time met with serious criticism. The late Dr. Alex. McKeown had drawn attention to the wretched state of some of the buildings; Professor Lindsay had again and again tried hard to arouse public indignation; others, too, had joined. The disgraceful condition was known to the health authorities, and they did what was possible for them, but they were not the body responsible. It is curious that in a city where public protests were common, and many worthy enterprises for the public benefit were undertaken, no public movement as regards elementary school education was ever set on foot, or indeed mentioned, by any class, and the children were allowed to suffer in mind and body during the attempt to educate them. Dealing with the general hygienic condition of the schools, the report states that of the 194 school buildings in Belfast, 53 are totally unsuitable for the purpose; 29 are graded as to be replaced as time serves; 100 are satisfactory, or can be made so; 11 are good. The majority of the schools have insufficient ground space. Complaint is made regarding the lighting and the ventilation, the old-fashioned type of desk, the insufficient room and floor space—100 children are cramped into floor space which normally should accommodate 30 to 50. In the private protests that were made earlier much stress was laid on deficient sanitary accommodation, but it is understood that this came under the control of the public health authorities, and was remedied. With a regular medical service and a new authority, every hope is now entertained that the children will have their bodies as well as their minds properly looked after. The old accusations have been fully substantiated.

Correspondence.

POSTERIOR GRAVITY DRAINAGE IN EMPYEMA.

SIR,—I should be much obliged if you would kindly allow me to supplement my article, on posterior gravity drainage in empyema, published in the BRITISH MEDICAL JOURNAL, May 5th, 1923 (p. 758), by stating that the further experience of my colleagues and myself confirms the opinion therein expressed—namely, that posterior drainage invariably effects prompt cure. We find, however, that taking as centre of external incision the termination of the two-and-a-half inch line drawn downwards from the inferior angle of the scapula occasionally admits of undesirable elasticity in way of encroachment on the posterior axillary line; consequently, in order to secure free dependent drainage with immediate cessation of purulent secretion and rapid cicatrization of sinus, thoracotomy (with or without excision of a piece of the ninth or tenth rib) should be executed just posterior to the posterior scapular line—a point which can be rapidly determined by counting the ribs from below upwards in the said line.

Again, I wish to invite attention to the aseptic and excellent drainage afforded by the use of a wisp of silkworm gut in these and similar cases. As elsewhere stated, these wisps are made by doubling twenty to forty strands of silkworm gut and tying the double with a piece of silk about one half-inch from each end. Permanent outdoor treatment is highly beneficial after operation.—I am, etc.,

Buenos Aires, Sept. 6th. JOHN O'CONOR, K.B.E., M.D.

TRAINING OF NURSES IN COTTAGE HOSPITALS.

SIR,—At the Annual Representative Meeting at Portsmouth it was decided that the British Medical Association should support a proposal that nurses should be allowed to undertake part of their training for registration in cottage hospitals. It may interest members to know that the Royal United Hospital, Bath, applied to the General Nursing Council for approval of the following scheme, under which probationers in cottage hospitals should be able to take up while there the preliminary examination of the General Nursing Council, and under which two years' work in one of these hospitals may count as one of the three required for registration.

Scheme for the Training of Nurses in Cottage Hospitals in parts of Wilts and Somerset, under Section 1 (Clause 2) of the Scheme of the General Nursing Council.

1. For the purpose of this scheme, such approved cottage hospitals as shall enter into it shall be affiliated with the Royal United Hospital, Bath. Only such cottage hospitals as are approved by the General Nursing Council can be admitted to the scheme.
2. Probationers of these hospitals shall, during the first four months, undergo at the cottage hospital the course of instruction set out in Sections 1, 2, 4, and 5 of the syllabus for the first year of training.
3. During the following twenty months they shall attend lectures given by the Sister Tutor at the Royal United Hospital, Bath. These lectures shall be given at that hospital or at such cottage hospitals and at such times as shall be most convenient for the attendance of the probationers.
4. At the end of this two years' training and lectures a probationer shall be qualified to enter for the preliminary examination, and the two years thus occupied shall, for the purposes of registration, be considered equivalent to one year in a complete training school.
5. There shall be an undertaking on behalf of the probationer that after passing her preliminary examination she shall carry out the third and fourth years of her training at the Royal United Hospital, Bath, or at some other recognized training school for nurses. This undertaking shall not apply in the case of those nurses who intend to train as midwives only.

This scheme has been approved by the General Nursing Council. In order to arrange details as to the places where and the times at which the lectures will be given, and the payment of expenses, it will be necessary to hold a meeting of the matrons or other representatives of the hospitals concerned. The council has approved the following hospitals: Chippenham, Frome, Melksham, Paulton, Savernake, Shepton Mallett, Swindon Victoria, Trowbridge, Warminster.—I am, etc.,

Bradford-on-Avon. CHARLES E. S. FLEMMING.

OBSTETRICS AND LOCAL HEALTH AUTHORITIES.

SIR,—I write to express agreement with Professor Louise McIlroy's letter on the above subject, which appeared in your issue of October 4th (p. 642).

After sixteen years of medical practice, ten of which have been spent in the public health service, I would add my testimony as to the results of unskilled midwifery in producing the chronic ill health of many mothers who attend child welfare clinics, and a certain number of the cases of paralysis, sometimes accompanied by mental defect, which occur among school children.

One of the means by which an attempt is being made at betterment is the ante-natal clinic. Such a clinic is more effective if the medical officer in charge, whether whole- or part-time, is not only possessed of previous experience in gynaecology and obstetrics, but continues to maintain practical touch with them. This is to some extent the case in areas where the ante-natal medical officer is also in charge of the maternity home and wards to which cases are admitted under the local authorities' maternity and child welfare scheme.

Dr. McIlroy suggests that one all-time medical officer might carry out the combined duties of ante-natal medical officer, emergency obstetrician to the local midwives, and inspector of the latter. This suggestion has much to commend it, and would have still more if charge of the local

maternity home were added to the duties. One obvious advantage would be the closer co-operation between the practising midwives and the ante-natal centres, which is so desirable and still so absent from many areas.

If Dr. McIlroy's suggestion should appear to savour too much of municipal midwifery for those of your readers who object to this line of medical evolution, there is the alternative one of a local obstetrician of recognized standing who would be willing to act as the emergency consultant for the local midwives, and to take part-time service under the local authority as medical officer to their ante-natal clinics. Such an officer would be in regular, not occasional, attendance at the clinic, and would co-operate with the inspector of midwives for the district.

The separation of the ante-natal from the infant welfare work, which usually have been combined under one officer, may also be objected to by some; but obstetrics is a branch of medicine for which many doctors of both sexes have neither liking nor natural aptitude, and for one who will make a successful obstetrician there will probably be several potential infant welfare specialists. It is therefore open to doubt whether the prevailing arrangement, although convenient, is the one best calculated to achieve results.

As regards nursing mothers, it will always be more natural and convenient for the mother of a young baby to attend a clinic with her baby and have supervision of her general health and diet from the medical officer in charge of the latter; but she could attend a so-constituted ante-natal clinic at least once within a few weeks of her confinement, and be subsequently referred to it whenever any condition arose suggesting the necessity for further consultation; and her special needs could thus be met without the establishment of another special clinic.—I am, etc.,

Willesden, Oct. 6th. AGNES HILL NICOLL.

SIR,—Dr. McIlroy's letter in your issue of October 4th (p. 642) seems to me to raise some curious points for the consideration of the general practitioner. Her suggestions, as far as I understand them, amount to the following: That no general practitioner should be allowed to attend an abnormal confinement if he does not hold a special permit from some competent authority. That he may be allowed to do so when the medical inspector or those holding permits are not available.

I should like to know if Dr. McIlroy seriously suggests that when a practitioner has attended a confinement at the request of a midwife he should be compelled to furnish a detailed report of his treatment to the medical officer of health? Finally, what about the patient? Perhaps she would prefer some ordinary practitioner (who has no permit) rather than the medical inspector provided.—I am, etc.,

Liverpool, Oct. 6th. C. A. ROBINSON.

HOSPITAL TREATMENT OF EARLY MENTAL DISEASE.

SIR,—In an article in your issue of September 27th Dr. Comrie brought before us the results of the treatment of early mental illness in the wards of the Edinburgh Royal Infirmary. The fact that 72 per cent. of 500 cases in the course of one year were discharged sufficiently well to return home speaks for itself, and Dr. Comrie is to be congratulated. Surely the day is not far distant when all general hospitals will set aside beds for the treatment of mental disease in its incipient stages.

There is one point, however, in Dr. Comrie's paper that requires some elucidation. What does he mean when he says, referring to the psycho-neurosis, that a previous sexual trauma in the Freudian sense was found to be especially prevalent? I am unaware that Freud places especial significance on the presence of a sexual trauma in the life-history of his patients. The roots of a psycho-neurosis are to be found deeply imbedded in the patient's unconscious mind, and can only be found after prolonged analysis.

Again, Dr. Comrie says: "In my opinion, however, the employment of this procedure [psycho-analysis], while very useful in elucidating the vagaries of the patient, is more apt, considered as a therapeutic agent, to be followed by increased mental unrest and distress than by improvement." Dr. Comrie cannot be referring to the psycho-analysis of the cases under review, for it is obviously impossible to analyse thirty-five cases in fifty-four weeks. If he means the investigation of the patient's sexual life by cross-examination I am in full agreement with him, but this is not psycho-analysis in its Freudian connotation, and Freud himself has warned physicians against the dangers of such pseudo-analysis.—I am, etc.,

Dundee, Sept. 30th. DAVID MATTHEW, M.B., D.P.M.

SIR,—The account given by Dr. J. D. Comrie in your issue of September 27th of the hospital treatment of early mental disorder is interesting. One would like to know whether the entrance of the patient was altogether voluntary, and whether he was detained or could leave if he chose. It might, perhaps, be suggested that a more satisfactory arrangement than the grouping of so many varieties (epileptics, inebriates, defectives, and toxic cases—many of them requiring quite distinctive treatment) might be arrived at by the starting of specialized homes, colonies, or places adapted for the care of delirious cases—for example, puerperal or influenzal. It is desirable that the latter should in every instance be kept apart from the stigma associated with lunacy.

Dr. Comrie stresses the fact that many of his cases were directly attributable to the vicissitudes of life. We may almost venture to say that in the majority of such there is no disease at all. He states: "It is important to note that most of the attempts at suicide were made by persons suffering from simple melancholia without delusions." What is most needed in all early mental cases is reassurance and hope for the troubled mind, and the supply of new interests to which mental activity may be diverted. The atmosphere of a general hospital can scarcely be said to be an ideal environment for furnishing these essentials. If his cases recovered enclosed within hospital walls in the midst of a great city, how much sooner would their balance have been regained with freer access of open air and sunshine and less concentration on their own ills and those of others. The great need for multitudes of such cases is not for more hospitals, but for homes of health and rest specially adapted for the recovery of mind and body.

No legislation is required for the purpose of carrying out this greatly needed development. There exists at present no legal barrier to the running of hospitals or homes for those not dangerous and unfit to be at large—in other words, the uncertifiable. Dr. Comrie states that in 64 per cent. of his cases certification was unnecessary. All that is requisite for the provision of the form of treatment here indicated is that Government grants should be extended to the health committees (as distinct from the asylum committees) of local authorities. They already possess the powers needed to run homes of this nature—quite apart from lunacy and free from detention—which could be inspected and controlled by the Ministry of Health with a view to the prevention of illegal restraints or ill treatment.

The most important advances in recent medical progress have been based on reasonable common sense applied to the prevention of disease or disorder. It is well worth while to apply the same to the beginnings of loss of mental balance. The slight increase in initial expenditure would lead in the end to a great saving, and is likely to meet with an abundant reward.—I am, etc.,

London, E.1, Oct. 3rd. S. E. WHITE.

CANCER IN AFRICAN NATIVES.

SIR,—For more than twenty years, to my knowledge, the statement has been made that malignant disease does not occur amongst primitive races. Dr. J. Bell Walker of Ayr, Scotland, recently wrote to me for details of a case of cancer that we had together in 1904, in a male Bantu native of Nyasaland, which he thinks is the first that has been scientifically proved. I believe that the medical officer (of Chiromo), who must have the credit of first suspecting it, was a Captain Fox. He sent it up to me, as principal medical officer at Zomba at the time, for confirmation. I agreed that it was an epithelioma, and asked Dr. J. B. Walker, then in charge of the Livingstone Memorial Hospital, to remove it; I believe that he agreed with us and operated. I then sent the specimen to the Imperial Cancer Research Fund, London, and, so far as I recollect, heard no

more about it. Dr. Walker has now ascertained that the Fund staff put the specimen in their museum and forgot to examine it critically. Dr. J. A. Murray has had microscopical sections prepared, and the evidence entirely clinches our clinical diagnosis. I had not heard of any cases in other doctors' hands, but since that mentioned above I have had three others of malignant diseases: one a sarcoma of the parietal bone of the skull in a young native boy (a Chikunda), about twenty years ago, that quickly ended fatally, one of a sarcoma of the forearm in a Manganja woman, the third of epithelioma (cancer) of the tongue of a Yao woman. Both women refused operation, and I left their district without being able to follow the cases to their termination.

I think that cancerous diseases must be as ancient as most others, and that some causes that have usually been advanced, such as dietetic ones, have only a nutritional effect on embryonic cells that may predispose to growths. Boys get warts on their fingers, possibly from seeing them on another boy's hands. In 1900, north of Lake Nyasa, I was asked to see an official's native servant man who had been hypnotized by a native doctor called Mwakatundu. It was 2 p.m., and he could not be roused. The old man certainly had an uncanny appearance, and ways likely to assist suggestion. The above-mentioned case of a malignant sarcoma of the forearm I treated by suggestion for a few days, telling the patient to carry on the auto-suggestion treatment in her village. That would be about 1912. When I returned to the district—I believe after a few months' absence—she was well and cheerful, and her tumour was only half the size that it was when she came to me.

I have read of consecutive cases of cancer occurring in families or old houses, and such cause suggested as dry-rot in old flooring boards. I advance the explanation that all cases may possibly be attributable to auto-suggestion as the causal exciting factor. The power of concentrated thought, and especially the subtlety of the "unconscious," are known. Animals have their subconscious mind, so why should not such an experiment as applications of the irritant tar to a guinea-pig's skin, causing cancer, be merely due to that. I have given up reading medical journals for a great many years, so do not know whether my suggestion regarding the possible cause of malignant diseases has been advanced by anybody else, or whether experiments on cause and treatment may have been carried out along those lines. I have retired from medicine and follow the precarious occupation of growing that seductive weed *Nicotiana tabacum* (the "Fumes of Hell" of James II), and it will be apropos to recommend it as a palliative of cancerous symptoms. I believe a West of England chemist once advanced a preparation of violet leaves for this purpose. Tobacco seems to have many remedial virtues. I have found it of much value as a fomentation in influenzal pneumonia of natives. Applied as old, dark leaves, with the mid-rib removed, done up in thin gauze, a few leaves thick, dipped in hot water, and kept damp with hot wet cloths, and warm with wool, etc., for some hours, according to effect, it would first have a stimulating effect, followed by a sedative one, besides an antiseptic action on the secondary microbic manifestations in malignant diseases. It might, then, well deserve its ancient French name of "herba regina." I will close with this motto: "Let fools step in when the great (pure scientists and specialists) and money have failed."—I am, etc.,

Makungwa, Limbe P.O., Nyasaland. J. E. S. OLD.

CARBON MONOXIDE POISONING.

SIR,—Some years ago a tall, strong-looking young man, of good complexion, came into my consulting room. He had scarcely sat down when he volunteered the following information: "Doctor, I cannot get the idea of suicide out of my mind." I inquired fully into the possible causes, and in response to some questions bearing upon the conditions under which he worked, he stated that, some little time before, a gas stove had been installed in his office. As far as could be ascertained he considered it an efficient stove; it was clean, convenient, economical, labour-saving, and it thoroughly warmed the office. Strictly speaking, if "fume" be defined as "smoke or steam from combustion or exhalation," this apparently admirable heating apparatus gave off no fumes; no gas stove can give off fumes in this sense, carbon monoxide being a colourless and also an odourless gas; it is always present if there be incomplete combustion of coal-gas. Further questioning elicited the fact that this stove had no outlet—in other words, it seemed that as there was no visible exhalation there was no need for a chimney to carry away the products of combustion. The conditions were the same as with an imperfect chimney, but, of course, worse in degree. I have rarely, if ever, found the chimney from a gas stove that had an upward draught all round the inlet, as the simple device of carrying a lighted taper or match all round the inlet easily proved. The stove in this young man's office was removed, and in a very few weeks he returned, quite happy, to my consulting room, and stated that the morbid idea of suicide with which he had been obsessed had left his mind. Whether or not he had ever trusted to a basin of water to counteract the baneful effects of a lethal gas, that delusion and snare had, fortunately, not been relied upon by him.

Some years before this incident I was sent for to see three children, said to be very ill. It was a poor home in a squalid street, like many streets that deface a beautiful residential town in England. On entering their bedroom and going towards their bed—there was only one bed in the room—there was a sudden sensation as of an iron band being tightened round my forehead; my head was in the poison; the children, being lower down, were comparatively free from it. A fine warm fire of coke was glowing splendidly. The diagnosis was quickly made: a down draught from an inefficient chimney had been causing the room to be invaded by copious amounts of carbon monoxide. Extinction of the fire was followed by the speedy recovery of the three children.

To what is the complexion of the modern professional baker due? At 5 o'clock one morning I was permitted, by the courtesy of the owner, to go over a small bakery which was generally admitted by the consumers of most wholesome-looking, pleasant-tasting bread, to be efficient. It surprised me not a little to find that our bread was cooked in an atmosphere of carbon monoxide, the fuel used being coke, which was burned in the oven. The cause of the ruined complexion of the workers was quite obvious. This bakery, like many others, was "passed" annually, after an expert inspector's careful examination. I would advise him to combine a little physiology with hygiene and sanitation. The conditions under which the bread was cooked, however, raised two questions in my mind. Is the partially charred crust of bread capable of absorbing large quantities of the poisonous monoxide—colourless, odourless, and tasteless—just as charcoal can absorb very many times its own bulk of many gases? And what is the physiological effect of consuming a foodstuff that has been cooked until part of it undergoes a modified charring—being "well fired," as is said—in an atmosphere of carbon monoxide? At present I am unable to answer these questions. From clinical observation, however, I am convinced that the vitaminic properties of bread so prepared are destroyed, and that the physique and health of the consumers—that is, a very large number of people—are, in an insidious way, very much impaired.—I am, etc.,

Reston, Berwickshire. R. CUNNINGHAM AFFLECK.

ASSISTANTS IN GENERAL PRACTICE.

SIR,—I was interested to read the letter headed "The hours of medical work" in the JOURNAL of September 20th (p. 542), and I heartily endorse the views expressed therein.

The British Medical Association has done admirable work in obtaining a minimum scale of remuneration for assistant health officers. When will the Association make a thorough investigation into the conditions of drudgery under which that large number of underpaid, overworked, badly housed members of the profession—the assistants in general practices—live?

Surely an average remuneration of £350 per annum, and a working day of twelve hours with repeated and frequent night work, and with but one free afternoon a week—and often not even that—is a state of affairs that should not be permitted to exist?—I am, etc.,

September 21st. EX-ASSISTANT.

Obituary.

W. H. A. JACOBSON, M.Ch.Oxon., F.R.C.S.,

Consulting Surgeon to Guy's Hospital.

We had to announce with much regret in our last issue the death on September 14th, at Lordine Court, Ewhurst, near Hawkhurst, of Mr. W. H. A. Jacobson, M.Ch., F.R.C.S., consulting surgeon to Guy's Hospital.

Walter Hamilton Acland Jacobson was born at Oxford in 1847; he was the second son of the Rev. William Jacobson, then Public Orator of the University and Vice-Principal of Magdalen Hall, soon afterwards Regius Professor of Divinity, and eighteen years later consecrated Bishop of Chester. He was educated at Winchester and Corpus Christi College, Oxford, where he took a second class in Moderations and graduated with first-class honours in Natural Science in 1869. Soon afterwards he entered Guy's Hospital Medical School, took the M.R.C.S. in 1872, and became F.R.C.S. in 1875. Many years later, when the M.Ch. degree was established at Oxford, he felt it his duty to sit for this examination before he could conscientiously examine for it. In the course of time he was appointed demonstrator of anatomy, assistant surgeon, and teacher of operative surgery at Guy's Hospital, and he rapidly developed into a wonderful teacher of anatomy and surgery. He was assistant surgeon for over twenty years, full surgeon for three, and consulting surgeon for nearly twenty years. He was also surgeon to the Royal Waterloo Hospital for Children and Women, Waterloo Road.

W. H. A. JACOBSON.

Photograph by [*Speaight, Ltd., London.*

No man ever gave more devoted and loyal service to his medical school and hospital than Mr. Jacobson. His work at Guy's came before everything else. During "take-in" or when he was "in Clinical" he was often in the wards by 7 a.m., even though he had been operating late at night. He frequently walked to the hospital from Great Cumberland Place. His lectures on anatomy were extremely popular because he had the gift of making the "dry bones live": his apt surgical allusions showed the great importance of anatomy in practical surgery. He prepared these and his surgical lectures with the greatest care, and generally arrived a long time beforehand and covered several blackboards with beautifully written and accurate notes and excellent drawings. He often distributed printed notes of his clinical lectures, which men treasured for many years. His surgical lectures and demonstrations were crowded, for his brilliant intellect, extensive knowledge, fascinating personality, and scintillating wit and humour made everything he said interesting and memorable. Men frequented his lectures, not only to gather sound knowledge and to be "signed up," but also to obtain mental refreshment and stimulation. Like the great teacher he was, he took pains to make everything clear to the dullest member of his class. For twenty years his "Out-patients" were most instructive and amusing; they were packed with students to the last. His kindness, sympathy, and generosity to his hospital patients were so extraordinary that many of them walked long distances to see him and to show themselves years after they had completely recovered.

His love for the students was deep and genuine; he helped them in all sorts of ways, often without thought of any reward. "Pom's" personal ascendancy over his pupils was so remarkable that he could say what he liked to them. He told them the blunt truth and exercised his ready wit and sarcasm upon them, but he never meant any harm by it. The men realized that it was all for their good, and they loved and feared him in return; some of them were a little hurt because he was not rude to them, thinking that he did not notice them, but "Pom" knew full well that they did not need any special attention.

Jacobson's boundless energy and great literary ability enabled him to write his unrivalled book *The Operations of Surgery*; afflicted as he was for many years with severe insomnia, he made good use of the time it afforded him and did most of his writing after waking in the small hours of the morning. This book was the outcome of a strong belief which he had "held for many years that a work on operative surgery which aimed at being more comprehensive in scope and fuller in detail than those already published would be of service to many who had recently been elected to hospital appointments, and to those who were working for the higher examinations." The first edition of this book appeared in 1888 and succeeded beyond all expectations, for its wealth of clinical experience, its accurate and critical descriptions of operations, and its sound common sense made it indispensable to every surgeon. It is probably the best book ever written on general operative surgery, and has run through six editions, the last of which appeared in 1915. Jacobson wrote another good book, on *Diseases of the Male Generative Organs*, published in 1893, and he revised several editions of John Hilton's great work on *Rest and Pain*. His contributions to the *Guy's Hospital Reports* were numerous and valuable, and lucid and charming in style. He also wrote some of the best articles for Holmes's *System of Surgery* and for Heath's *Dictionary of Surgery*. Through his writings Jacobson became known all over the world, and many medical men came to see him and his work at Guy's Hospital. It was a pity that he had to wait such a long time before "getting his beds." He was on the Court of Examiners of the Royal College of Surgeons for some years, and he also examined for the University of Oxford.

We are indebted to Mr. R. P. Rowlands, surgeon to Guy's Hospital, for the following personal tribute:

When I first knew Jacobson, over thirty years ago, he was assistant surgeon and lecturer in anatomy and at the height of his fame and power. He presented a distinguished and striking figure. A little over middle age, his hair was already white and scanty, he was of medium height, very thin, slight, and extraordinarily quick and active; his step was peculiarly springy. His forehead was high and his nose prominent; his face was lean and expressive. He was a great walker and believed in taking plenty of exercise in order to keep himself fit. Above all, Jacobson was a character and a genius, for he had an infinite capacity for taking pains combined with great natural ability. With all this he was very human and apparently full of contradictions and eccentricities. He was the hero of numberless tales which are still told wherever Guy's men meet. Shy and austere in manner, he appeared to be somewhat vain and pompous, but in reality was very modest and unassuming. Once a stranger, misled by his distinguished appearance, mistook him for a famous knight and asked: "Are you

Sir ——?" "No, sir," was the reply, "just common clay." He had a great contempt for anything that sounded false or savoured of self-advertisement, but he was very quick to discover merit and scrupulous in giving credit for good work done. In short, he was a man of unblemished character, high ideals, great attainments, and lovable personality; somewhat capricious in his temper, he was not always easy to understand. Too honest to suffer fools gladly, he must have found his ready wit somewhat of a hindrance to him in his private consulting practice, with the result that he did not reap quite as well as he sowed. But after all, although he was full of honest ambition, Jacobson never did anything for gain, but rather for good.

Somewhat late in life he was happily married, but the tragic loss of his son and only child, who was accidentally drowned in 1905, cast a shadow over his later years and led to his complete retirement from the profession which he had adorned. The rest of his life he spent at his country house at Ewhurst in Sussex, devoting himself to his wife, his garden, and his poor neighbours. He was very good and kind to the children, and had a great and lasting influence over them. On Sundays he taught them the Scriptures, with the aid of wonderful pictures, and immediately afterwards taught them how to shoot or play games. They adored him in return and made his latter days happier. Those who had the privilege of visiting him at Lordine Court can picture him still in his beloved garden, suitably but wonderfully clad, bending to his toil, proudly showing a rare and beautiful plant or bringing a weakling to a better place in the sunshine.

An old pupil, house-surgeon, and friend, Dr. John Fred. Briscoe writes:

The death of Mr. W. H. A. Jacobson creates in many of his old pupils feelings of sentimental respect and regard. The son of the late Bishop of Chester, he brought to bear on his work a nobleness of character which was unique. He possessed the highest sense of duty to the profession which he adorned. Those who had the honour of being his house-surgeons regarded him as an exemplary teacher imbued with the faculty of personal inspiration. None but those with similar temperamental qualities sought his disciplinary advice, but he exacted from them a complete return of their services, both in and out of hospital. Mr. Jacobson steered the course of not a few in the way in which their professional abilities best fitted them in their future careers. And his thoughtfulness and thoroughness were the advantageous assets which he passed on to others. He objected very strongly to irregular manners and particularly to the use of unparliamentary language. In fact, being finished himself, he expected the same polish from those who served under him. As surgeon to the Royal Waterloo Hospital for Children and Women he was instrumental in raising it to a higher standard of excellence than it had hitherto attained. Following in the footsteps of John Hilton, he reproduced the work of that great surgeon, *Rest and Pain*, besides his own standard book on *Operations of Surgery*. Not least, he was a disciple and admirer of Dr. Hilton Fagge, author of *Principles and Practice of Medicine*, nephew of John Hilton and one of the hardest worked physicians Guy's ever had. His resignation at Guy's Hospital was prematurely the outcome of a family calamity, which caused his complete retirement. His was the motto *Dare Aude*.

SIR CHARLES CAMERON, Bt., M.D., M.Ch., LL.D.,
Formerly Member of Parliament for Glasgow.

We regret to announce the death of Sir Charles Cameron, Bt., on October 2nd, at Englefield Green, Surrey, at the age of 83. For twenty-four out of twenty-six consecutive years he was one of the representatives of the city of Glasgow in Parliament, and during that period became one of the most active and prominent of the private members of the House of Commons.

Charles Cameron was the son of John Cameron, a newspaper proprietor of Glasgow and Dublin. He was born on December 18th, 1841, in Dublin, and was educated first at the Madras College, St. Andrews, and later at the University of Dublin. At Trinity College, Dublin, he was senior moderator and gold medallist in 1862, and gained first place in the final medical and surgical examinations of that year. He graduated M.A. and M.D. in 1865 and received the degree of LL.D. in 1870. He continued his medical studies in Paris, Berlin, and Vienna. Cameron's ample professional qualifications, however, did not lead him into the practice of medicine, for in 1864 he became editor of the *North British Daily Mail*, a Glasgow periodical of which his father was part proprietor. During the ten years of his editorship he entered more and more into the public life of Glasgow, and by the beginning of the seventies his devotion to the cause of social reform, education, and temperance, and his interest in politics, had won for him a name among the more advanced members of the Liberal party in the West of Scotland. In 1874 he stood for Parliament and was returned at the head of the poll for the undivided constituency of Glasgow, which at that time had three members. When the city was split into separate constituencies, in 1885, he was again elected, and sat as member for the College Division for ten years. In 1895 he lost that seat, but from 1897 to 1900 he represented the Bridgeton Division.

During his many years of parliamentary life Charles Cameron had the distinction of getting no fewer than nine separate Acts placed on the Statute Book, and in recognition of his many services he was created a baronet in 1893. He was "the father of the sixpenny telegram"; he introduced and carried the Inebriates Acts, also the Acts abolishing imprisonment for debt in Scotland, and the Acts conferring the municipal franchise on women in Scotland. Other measures introduced by him secured various reforms in the Scottish Liquor Licensing Laws. In 1893 he was made chairman of the Departmental Committee on the transit of cattle coastwise; in 1894 chairman of the Departmental Committee on habitual offenders; and in 1895 a member of the Royal Commission on Liquor Licensing Laws.

Sir Charles Cameron was the author of many papers and pamphlets on social and political subjects; his occasional medical writings, as might be expected, were addressed rather to the public than to the profession, and dealt with such matters as vaccination and the prevention of cholera. He was president of the Health Section of the Social Science Congress in 1881, and of the Public Health Section at the Annual Meeting of the British Medical Association held at Belfast in 1884. His presidential address at Belfast was entitled "The Cholera Microbe and how to Meet It," and was printed in full in the British Medical Journal of August 2nd, 1884, page 233. In it he gave a scholarly account of recent research into the habits and peculiarities of the cholera bacillus. In view of the interest which the question was then exciting, especially in connexion with the criticisms of English observers on the researches of Robert Koch, the address was reprinted at the close of 1884 in the form of a shilling pamphlet. Another medical distinction in which he took pride was the gold medal of the Dublin Pathological Society. In 1895, when the break in his parliamentary career took place, he was presented with his portrait by a wide circle of friends and admirers in recognition of his high personal character and his services to the city of Glasgow. He was for many years a justice of the peace, and in 1894 was appointed a deputy lieutenant of the county of the city of Glasgow.

Sir Charles Cameron married twice. He is survived by his second wife, one daughter, and a son, born in 1903, who succeeds to the baronetcy.

HENRY GERVIS, M.D., F.R.C.P.Lond.,
Consulting Obstetric Physician, St. Thomas's Hospital.

Dr. Henry Gervis, who died on September 25th, was born in 1837 at Tiverton, Devon. He was the eldest son of Mr. F. Shorland Gervis, a medical practitioner of that town. He was educated at Taunton School, and while there gave evidence of the mental capacity that afterwards distinguished him. In the school prize list of Christmas, 1852, he is recorded as having won the first prizes in Hebrew, Greek, Latin, history, chemistry, and German. He received his medical education at St. Thomas's Hospital, and there continued his habit of prize winning, and ended his career as a student by gaining the Treasurer's medal. He also

obtained a medical exhibition and gold medal for anatomy and physiology at the University of London. After obtaining the M.R.C.S. diploma in 1858, he graduated M.B.Lond. in 1860, and proceeded M.D. in the following year. He became M.R.C.P. in 1862 and was elected F.R.C.P. in 1874. Dr. Gervis became successively assistant obstetric physician, obstetric physician, lecturer on midwifery and diseases of women, and consulting obstetric physician to the hospital. His connexion with St. Thomas's began when the hospital was situated in St. Thomas's Street, continued through its temporary sojourn in the old Surrey Gardens, and was completed in the present building on the banks of the Thames. He commenced practice in St. Thomas's Street, and rapidly built up an extensive connexion. In 1879 he removed to 40, Harley Street, and there became widely known as a consultant in gynaecological cases. His courtly presence and charm of manner, combined with his vast stores of knowledge and great practical experience, made his advice eagerly sought for in his own specialty, and endeared him to an ever increasing circle of patients. The cares of his busy practice left him scant leisure for writing, and beyond some brief contributions to the medical press, he has left no permanent literary memorial of his work; but his painstaking and accurate method of teaching must have left its impress on many generations of medical students.

In 1899 Dr. Gervis retired from practice and went to live at Hillingdon Heath near Uxbridge. There his energy found vent in much public work, and he became a magistrate for the county of Middlesex. Eight years later he removed to Bath, where he continued to reside until his death. At Bath he took a keen interest in the Royal Mineral Water Hospital, of which institution he became a vice-president, in the District Nurses Institute, the now defunct Bluecoat School, and many other charities. He took a great interest in antiquarian research, and in the transactions of the Huguenot Society, being descended on his mother's side from a Huguenot family. He was an enthusiastic and learned gardener.

Dr. Gervis married in 1860 Phoebe Louisa, daughter of the late S. K. Pollard, Esq., of Taunton. Mrs. Gervis predeceased him in 1918, after fifty-eight years of an ideal married life. He leaves one daughter, and one son, Dr. Henry Gervis of Brighton.

Dr. Edgar Reid, who died on September 19th, aged 59, received his medical education at Guy's Hospital. He obtained the qualifications M.R.C.S., L.R.C.P. in 1894, and the greater part of his professional life was spent in Swansea, where he was honorary gynaecologist at the Swansea Hospital. During the war he was in charge of the 33rd War Hospital at Cardiff. Throughout his life he was an enthusiast in sport; in Rugby football he was the captain of the Guy's Hospital and Swansea teams, playing three-quarter for both. He also won distinction as a batsman in cricket, and was captain of the Swansea XI several times. In 1896 he took an active part in the formation of the Pennard Golf Club, and was both captain and secretary: on one occasion he was the runner-up in the Welsh golf championship. He leaves a widow and one daughter. A colleague writes: "Deliver us from mean hopes, from fear and favour, and grant that we here before Thee may finish what remains of our course without dishonour to ourselves or hurt to others." This final prayer at the graveside so truly expressed the outstanding attribute of the friend whom we accompanied to his last resting place. No one who came in contact with Edgar Reid, even if only for a short period, could imagine him stooping to anything mean, or failing in his obligations. In his varied pursuits he gave of his very best. As a consultant in gynaecology he gained great success in an extensive practice by his operative skill and kindliness, which won for him the confidence and respect of his patients and the whole-hearted support of those who worked with him, doctors and nurses alike. As an athlete he had outstanding ability, excelling in many branches of sport. He was held in great admiration as an exponent, and he was as much appreciated for his generosity as an opponent, quick to express admiration of the prowess of any who defeated him, and unstinted in his praise of the skill of those whom he overcame. He was a sportsman in the noblest sense of the word. He never harboured a lurking grudge, nor a dishonourable thought. Death has robbed us of a loyal friend and a most lovable colleague. "Every heart that has beat strong and cheerfully has left a hopeful impulse behind it in the world, and bettered the tradition of mankind."

Dr. John Charles Harris died on September 21st at Ramsgate, where he had lived since his retirement from practice nineteen years ago. He was born at Chipping Norton, and received his medical education at Westminster Hospital, taking the diplomas of M.R.C.S.Eng. 1859, L.M. 1860, L.S.A. 1861. For over forty-five years he practised at Croydon. He was almost 89 at the time of his death, but during the last twelve months had practically been confined to his [illegible]. The death of his wife four years ago proved a great blow to him. In his younger days he was an excellent raconteur; within a few months of his death, too, he could always be roused, and would chuckle like a boy at tales of the Heythrop hounds at Chipping Norton, the Bicester and Whaddon Chase packs. We are indebted to Dr. Swindale of Ramsgate for these few notes.

The well known Swedish clinician, Professor Frithijoff Lennmalm, has recently died at Stockholm, at the age of 66.

Dr. Tommaso de Amicis, the *doyen* of Italian dermatologists and formerly director of the clinic of dermatology and syphiligraphy at Naples, has recently died.

Dr. Charles Goris, a leading Brussels oto-rhino-laryngologist, has recently died.

Universities and Colleges.

UNIVERSITY OF LONDON.

London Hospital Medical College.

The following awards are announced:—University Scholarship in Anatomy and Physiology open to Students of the Universities of Oxford and Cambridge (£75): J. G. A. Davel (Trinity College, Oxford). Entrance Scholarship in Science (£100): Mr. E. A. Hunter. Epsom Scholarship (Free Medical Course): C. E. H. Turner.

St. Thomas's Hospital Medical School.

The following scholarships have been awarded. Entrance Arts Scholarships (1924): First (value £50), J. A. G. Bird; second (value £50), J. G. Dathan. Entrance Science Scholarships (1924): First (value £150), T. H. Wilson; second (value £60), A. M. Easton. Entrance University Scholarship (1924): (Value £100), C. I. Tuckett (Trinity College, Cambridge). Proxime Accessit, V. B. Wigglesworth (Caius College, Cambridge). William Tite Scholarship (£25), H. C. Trowell.

UNIVERSITY OF WALES.

The following candidates have been approved at the examination indicated:

Final M.B., B.Ch. (*Pathology and Bacteriology*).—Annie E. C. Davies, *D. J. Davies, T. W. Davies, R. W. Edwards, Dilys Jones, *T. Jones, W. H. M. Jones, I. O. Martin, H. G. St.M. Rees, J. D. Williams, J. H. Williams, W. B. Williams.

* With distinction.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

The Gilbert Blane Medal.

Surgeon Lieutenant Commander Harold B. Padwick, D.S.O., R.N., has been awarded Sir Gilbert Blane's Gold Medal, he having obtained a first-class certificate at the examinations held in 1924 for promotion to the rank of surgeon commander.

DEATHS IN THE SERVICES.

Lieut.-Colonel William Freed Thomas, Madras Medical Service (ret.), died on August 8th, aged 71. He was the son of William Thomas, printer, of New Town, Madras, and was educated at the Madras Medical College and at University College, London; he took the L.S.A. in 1878 and the M.R.C.S. in 1879, and entered the I.M.S. in that year; he became lieutenant-colonel after twenty

years' service, and retired on June 22nd, 1909. He served in the Rumpa rebellion of 1879-80, and in the Burmese war from 1886 to 1889, when he took part in the operations of the 4th and 6th Brigades, and received the frontier medal with two clasps.

Major Dugald Nairne Anderson, Indian Medical Service (ret.), died on July 11th, aged 51. He was educated at the University of Edinburgh, where he graduated M.B. and C.M. in 1896. He entered the I.M.S. in July, 1899, and became major after twelve years' service; he retired on account of ill health on September 1st, 1912. He served in the China war of 1900, receiving the medal.

Major William John Masterson, Indian Medical Department, died on August 9th, aged 52. He was educated at the Calcutta Medical College, entered the I.M.D. in February, 1892, received his first commission as lieutenant in December, 1914, and reached the rank of major in February, 1922. He served on the North-West frontier of India in the Tirah campaign of 1897-98, receiving the medal with two clasps.

Lieut.-Colonel Anthony Hickman Morgan, D.S.O., J.P., D.L., R.A.M.C. (ret.), died at Cowes, Isle of Wight, on September 29th, aged 66. He was born in Dublin on June 29th, 1858, the son of the late Captain Anthony Morgan, 95th Foot, of Skibbereen, co. Cork, and was educated in Dublin, where he took the L.R.C.S.I. and L.K.Q.C.P. in 1880. Entering the army as surgeon on February 5th, 1881, he became surgeon-major after twelve years' service, and retired on February 12th, 1896. Though he was in the army only fifteen years he saw a great deal of war service in that time: Egypt, 1882, medal and Khedive's bronze star; West Africa, expedition up the Gambia river against the native chief, Fodey Kabba, 1891-92, medal with clasp; West Africa, 1893-94, operations against the Sufas, mentioned in dispatches, *London Gazette*, February 28th, 1894; expedition in Gambia against Fodey Silah, mentioned in dispatches, *London Gazette*, May 4th, 1894, clasp and D.S.O.; and, after retirement, South African war, 1899-1900, on hospital ship *Princess of Wales*, mentioned in dispatches, *London Gazette*, June 17th, 1902, Queen's medal with clasp. On July 7th, 1897, he was appointed major and honorary lieutenant-colonel of the 17th (Volunteer) Battalion of the Rifle Brigade. In 1904 he served as high sheriff of County Cork, and in the same year became a Knight of Grace of the Order of St. John of Jerusalem. In 1906 he unsuccessfully contested the Isle of Wight as Conservative candidate. He was also a J.P. and D.L. for County Cork, an F.R.G.S., and F.Z.S. In 1896 he married Mary, daughter of the late C. E. Bagnell, of Clonkennan, Limerick.

Surgeon Captain Horace Bruce Marriott, O.B.E., R.N. (ret.), died at Epsom on September 28th, aged 61. He was the son of the late Rev. C. Hardwick Marriott, vicar of Walton-cum-Felixstowe, and was educated at Guy's. After taking the M.R.C.S. and L.R.C.P.Lond. in 1888, he entered the navy, becoming surgeon commander on February 11th, 1907, and retiring with the rank of surgeon captain on February 18th, 1918.

Surgeon Lieutenant Commander William Leckie Coullie, R.N., died suddenly at Southsea on September 15th, aged 37. He was the youngest son of the Rev. James Coullie, of Pencaitland, and took the Scottish triple qualification in 1915, after which he entered the navy, attaining his recent rank on April 12th, 1921. He was serving on H.M.S. *Vernon*, at Portsmouth.

Medical News.

THE Home Secretary has appointed Sir Archibald E. Garrod, K.C.M.G., M.D., F.R.S., to be a member of the Advisory Committee on the Administration of the Cruelty to Animals Act, 1876, in the place of Sir H. Bryan Donkin, M.D., who has resigned.

THE Royal Commission on National Health Insurance announces that its meetings will be resumed on October 16th, and that any persons or bodies desiring to submit evidence should communicate, without delay, with the Secretary of the Commission, Mr. E. Hackforth, Ministry of Health, Whitehall, London, S.W.1.

THE St. Thomas's Hospital old students' dinner will be held at the Prince's Restaurant, Piccadilly, on Friday, October 24th, at 7 o'clock for 7.30. The chair will be taken by Dr. Seymour Taylor. The price of the dinner, inclusive of stewards' fee, is 15s., to be paid at the restaurant. Decorations will be worn. The honorary secretaries are Mr. R. H. O. B. Robinson and Dr. D. G. Leys.

THE dinner of the past and present students of University College Hospital, London, which was postponed, will be held on Friday, October 24th, at 7.30 p.m., at the Hotel Cecil. Tickets can be obtained from Mr. Gwynne Williams and Dr. T. R. Elliott at the medical school.

THE thirty-third French Surgical Congress opened on October 6th, at the Paris Faculty of Medicine, under the presidency of Professor Tuffier. The audience included a delegation of Polish surgeons.

DR. FRANK CLARE WILKINSON, dental tutor in the dental school of the University of Liverpool, has been appointed to the newly created chair of dental science in the University of Melbourne. Dr. Wilkinson graduated B.D.S.Liverp. in 1912, M.B., Ch.B. in 1915, and M.D. in 1917.

A COURSE of four public lectures on water supply and its purification will be given at University College, London, W.C., by Professor S. L. Rashkovich, M.D., Director of the Technical Sanitary Institute of Petrograd, on Fridays, October 10th, 17th, 24th, and 31st at 5.30 p.m. Professor H. R. Kenwood will preside at the first lecture. Tickets of admission are not required.

AT the third of the series of post-graduate lectures on cancer, to be delivered in the West Lecture Hall of the Royal Society of Medicine on October 17th at 5.30 p.m., Mr. J. Swift Joly will speak on cancer of the bladder. These lectures are open to all members of the profession without fee. A three weeks' intensive course in laryngology, rhinology, and otology will begin on October 13th at the Central London Throat, Nose, and Ear Hospital, and will occupy the whole of each day, except Saturday. The third week of the course in psychological medicine at the Bethlem Royal Hospital begins on October 14th. On October 14th and 16th Dr. G. C. Low and Dr. Manson-Bahr will give clinical demonstrations on tropical medicine at the London School of Hygiene and Tropical Medicine. Full particulars of these courses may be had from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

THE fifth International Congress of Public Health Nursing commenced at Bedford College on October 1st. This course is organized by the League of Red Cross Societies in collaboration with Bedford College and the College of Nursing, and its aim is to train nurses for executive and teaching positions under municipal, State, or Red Cross societies.

DR. A. G. WILKINS, on his retirement from the office of senior medical inspector of schools to the Staffordshire Education Committee, has been presented by the members of the staff and friends with a gold wrist-watch, a travelling clock, and medical books.

A LYCH-GATE, erected at the entrance to Ludgershall churchyard, was dedicated on September 25th as a memorial to the late Dr. James Evan Jones, who for many years practised in the district.

AT the meeting of the Society for the Study of Inebriety to be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Tuesday, October 14th, at 4 p.m., Professor W. E. Dixon, M.D., F.R.S., will open a discussion on cocaine addiction. Each member and associate may introduce visitors.

THE opening meeting of the University College Hospital Medical Society, at which Professor J. S. Haldane, F.R.S., of Oxford, is to read a paper on the physiology of acclimatization to high altitudes, has been postponed from Friday, October 17th, till the following Wednesday, October 22nd, at 8.15 p.m.

THE Fourth International Congress of the History of Medicine will be held at Geneva from July 22nd to 27th, 1925. Sir D'Arcy Power is the *président d'honneur*, and the president of the Congress is Dr. C. G. Cumston. The general secretaries are Drs. A. de Peyer and Émile Thomas, both of Geneva. A preliminary programme will be issued on December 1st, 1924, and can be obtained from the Bureau de Secrétariat Général, 20, rue Général-Dufour, Geneva.

AT a meeting of the Yorkshire Tuberculosis Society on Saturday, October 25th, at 4 p.m., at the Tuberculosis Dispensary, Queen's Road, Sheffield, Mr. H. Morriston Davies, consulting surgeon, University College Hospital, London, will give a lecture, with lantern illustrations, on surgery in the treatment of pulmonary tuberculosis. All medical practitioners will be welcome.

AT the Gloucester City Police Court on October 2nd Dr. W. R. Hadwen was committed for trial at Gloucester Assizes on a charge of manslaughter arising out of the death of a child named Nellie Burnham, aged 10, who died on August 10th. Mr. Micklethwait, who appeared for the Director of Public Prosecutions, in opening the case said that the allegation of the prosecution was that the child died from diphtheria and pneumonia, and that her death was caused or contributed to by the gross negligence of the defendant. Evidence was given by the mother of the child; by Dr. E. S. Ellis, who attended the child during the last day of her life; by Dr. W. Washbourn, who made the *post-mortem* examination; by Dr. R. B. Berry, M.O.H. for Gloucester and medical superintendent of the Infectious Diseases Hospital; and by Sir William Willcox, physician to St. Mary's Hospital and assistant physician to the London Fever Hospital, who was called by counsel for the prosecution as an expert witness. Dr. Hadwen had been already committed for trial on a coroner's warrant on September 12th. Bail was allowed, and Dr. Hadwen, who was represented by Mr. A. F. Clements, reserved his defence.

THE Harveian Society of London will hold a clinical meeting at the Paddington Green Children's Hospital on Thursday, October 16th, at 4.30 p.m.

THE Chadwick Lecture programme for this autumn includes lectures in London on "Defective hygiene and child life," with special reference to the effect produced on growth and development of children by town dwelling and slum areas, by Dr. Lawson Dick, M.D., F.R.C.S.; on "Rats," by Mr. Mark Hovell, F.R.C.S.; on "Smoke," with a review of its causes, its effects on vegetation, fabrics, masonry, and metal work, and its influence on health and the death rate, by Professor J. D. Cohen, F.R.S.; and on "Ante-natal and post-natal child physiology and hygiene," by Dr. W. M. Feldman. Each lecture will be illustrated by epidiascope or lantern slides, and among the chairmen will be Sir William J. Collins, M.D., chairman of the Chadwick Trustees, Sir James Crichton-Browne, M.D., and Sir Frank Baines. Further information about these lectures, which will be free to the public, may be had from the secretary at the offices of the trust, 13, Great George Street, Westminster.

THE Tokyo University library, which was destroyed in the great earthquake a year ago, is now being quickly restored, a large number of books having been presented by the Rockefeller Foundation, the Universities of Rome, Germany, Michigan, Columbia, and California, educational bodies connected with the French Academy, and other countries, including India, Australia, Holland, and Switzerland.

DR. JAMES F. E. BRIDGER, principal civil medical officer, has been appointed a nominated official member of the Legislative Council of the island of Ceylon.

THE Home Secretary has appointed Dr. Sibyl Gertrude Overton to be an Inspector of Factories and Workshops under the Factory and Workshops Act, 1901.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager, 429, Strand, W.C.2, on receipt of proof.

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429, Strand, London, W.C.2. Attention to this request will avoid delay. Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429, Strand, W.C.2.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westrand, London.*

MEDICAL SECRETARY, *Medisecra Westrand, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone: 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone: 4361, Central).

QUERIES AND ANSWERS.

OBSTINATE CONSTIPATION IN A CHILD.

"MEDICO" asks for suggestions for further treatment in the following case: A boy, aged 3, with a history of chronic constipation and recurrent rises of temperature. Prolapse of the rectum occurs at times. The child has been given two tablespoonfuls of liquid paraffin a day, with the result that one stool has been passed every other day. He has also had occasional soap-and-water enemas. He has now been put on a mixture containing sodium sulphate, tincture of belladonna, and infusion of senna three times a day, with liquid paraffin twice a day, and cascara cordial one drachm at night. Abdominal massage is being used, but the bowels are still obstinate and prolapse recurs at times.

ELECTRIC LIGHTING AND HEATING.

"D. M. O." writes: At present I use electricity for lighting on the "flat rate" plan, and I am thinking of adopting it on the "Norwich" system for heating purposes as well. I should be glad to hear the experiences and results of one or two medical men who have tried this system in the house and surgery.

INCOME TAX.

Cash Receipts or Book Debts?

"D. L." has retired after thirty-four years' work in practice. The local inspector of taxes insists that he is chargeable in respect of debts paid to him after retirement.

*** An assessment on a practice for a particular financial year is in respect of the profits of that practice *for that year*; it is calculated on a three years' average, and is usually based, as regards the gross profits, on cash receipts rather than on a detailed estimate of the *value* of the year's bookings, that method being convenient and yielding, in the long run, the same result. It therefore follows that when tax has been paid on assessments for a number of years to, say, April 5th, 1924, the liability has been accounted for in respect of precisely the same period, and where the practitioner has ceased to exercise his profession there is no valid legal ground for assessing him for subsequent periods in respect of profits, which he has, in fact, ceased to earn.

"F. K. M." has declined to supply particulars of his book debts, claiming to base his liability on cash receipts; the inspector of taxes has now arranged for estimated assessments in excess of the amount of liability returned.

*** The position with regard to the cash receipt basis is that where a practice is in a normal condition the actual receipts year by year approximate to the *value* of the year's bookings. If the cash receipt basis is displaced, the difficulty that immediately arises is to estimate the value of each outstanding book debt—notoriously both difficult and important in the case of a medical practice. The matter was discussed with a leading official at Somerset House at length (see our issue of November 19th, 1921, SUPPLEMENT, p. 185), and it was understood that objection to the application of the cash receipt basis would not be taken by the Inland Revenue Department except in abnormal circumstances—for example, in the case of a new practice. We suggest that our correspondent should call the local inspector's attention to this fact and ask him what facts he has in mind in treating his case as abnormal.

Average War-time Concession.

"R. O. N." understands that there was an income tax concession to doctors who served as medical officers in the army during the war by which they were allowed, on resuming civil work, to treat their army service pay as part of the average for assessment. As the pay was generally less than practice earnings, the concession might be valuable. The inspector of taxes states that the concession applied only to non-practising doctors.

*** It is always difficult to speak definitely of a "concession," but so far as our information goes the basis of the concession was a recognition that service in the forces was a peculiar form of *employment*, and that as a result where an officer in the R.A.M.C. resigned his commission and took other *employment*—for example, as an assistant, he was allowed to average his army pay for the purpose of his civil assessment. We believe, therefore, that the inspector is correct in stating that the concession did not extend to the earnings of a practice, which, technically, are not profits of an "employment."

Non-medical Profits.

"D. C." has been requested by the inspector of taxes to give full details of "the profits made by him in his dealing in stocks and shares," and asks, "must I pay income tax on these profits, and how do I stand with regard to my losses?"

*** Whether "D. C." is liable depends on whether he can correctly be said to be dealing in stocks and shares. If he does more or less habitually buy shares with the intention of reselling them he is distinguishable from the more ordinary case of the man who buys for investment purposes and may or may not form the intention later of reselling at a profit. In the former case his profits are assessable, in the latter the result of his transaction is a gain in capital and it is not liable to tax. Assuming that liability attaches to the gains, it follows that relief is due in respect of the losses. Ordinarily this relief will operate automatically—that is, the total amount of liable profit for a year will be the sum of the profits on various successful transactions, less the sum of the losses on less fortunate speculations.

LETTERS, NOTES, ETC.

THYMOL FOR THREADWORMS.

DR. WILLIAM CORBET (Worthing) writes: I observe that Dr. Rachel Gethen, in a short note in the JOURNAL of October 4th (p. 650), recommends, and has administered, two successive ½ drachms of thymol in alcoholic solution, not only with no untoward result, but with satisfaction to her patient and herself. This seems most remarkable in view of the well known toxicity of thymol in solution and the emphasis laid by all authorities on the necessity for avoiding alcohol, ether, chloroform, turpentine, or castor oil, as solvents, during its exhibition. I have frequently

given thymol for ankylostomiasis whilst practising in the tropics, but with a wholesome respect for the views of Manson and others (q. v.). Dr. Gethen's suggestion is very risky, to say the least of it, and I warn others against adopting it.

STORIES OF PEOPLE TURNING RAPIDLY BLUE.

SEVERAL cases have recently been recorded in which the patient turned "blue," and the reports have been gathered together by enterprising reporters into paragraphs which might seem to suggest that the blueness was in each case due to a similar cause. This is clearly not the case. In a fatal case the medical evidence was to the effect that the cause of death could not be stated in the absence of a *post-mortem* examination; it might, for instance, have been acute pneumonia, acute laryngeal oedema, vascular disturbance, pulmonary thrombosis or embolism, heart disease, rupture of an aneurysm, or apoplexy—for example, pontine haemorrhage. In children a rabbit bone or other foreign body may set up acute laryngeal spasm; other cases may be examples of acute food toxinaemia. In one case poison seems to have been suspected by the coroner. Again, a deep ebony may be caused by a combination of cyanosis and petechial haemorrhage resulting from toxinaemia. One case was a steel worker, and in this instance the discoloration may have been due to gas poisoning. True melanosis is a slow process, and the discoloration is rather a sepia-brown tending to black, though a bluish tinge might be produced by the sepia or black pigment showing through layers of epidermis. In all fatal cases of the kind a *post-mortem* examination should undoubtedly be made, as correct determination of the cause of death is desirable from the statistical point of view.

SUGAR AND MIGRAINE.

DR. H. BAZETT (Torquay) writes: Dr. Thomas's letter (BRITISH MEDICAL JOURNAL, September 27th, p. 598) is interesting and suggestive; but with the complex human mechanism, does it not invariably turn out to be an error to ascribe any one set of symptoms to any one single material cause? May I add my experience to the solution of the problem? I found several of the very worst cases I was called to as a general practitioner occurring in early and late adult life, but dating from childhood, yield entirely to a prescription of the juice of half a lemon, unsweetened, in a tumbler of water, on an empty stomach, night and morning, for the remainder of life. In one case, a male, breaking of this habit twice in the three years I attended him, led to quick recurrence of the fortnightly attacks. I found that in all cases I could get a history of ancestral gout.

CONGENITAL PYLORIC STENOSIS IN TWINS.

A GOOD example of the close similarity, as it were duplication, sometimes to be observed in twins is contained in two notes published recently of two pairs of twins suffering from congenital hypertrophic stenosis of the pylorus. In one instance, reported by H. Leslie Moore, both the infants were submitted to Rammstedt's operation (longitudinal incision of the thickened serosa and muscularis down to, but not through, the mucosa) at the age of 4 weeks; both died of respiratory paralysis six and eight days after the operation. In the other instance, reported by Herbert H. Davis of Omaha (*Journal of the American Medical Association*, vol. 83, p. 686), Rammstedt's operation was performed at the age of 4 and 5 weeks respectively. Both infants did well, and about a year later won first prize for twins at a baby show.

RESPIRATORY CRISIS IN AN INFANT.

DR. M. L. BARST (London) writes that he was called by a midwife to a baby, born two hours previously after a normal labour. The baby was somewhat premature (37–38 weeks), but was rather large. At birth it cried lustily, but soon afterwards its breathing became very shallow, and the crying was replaced by a feeble crowing. Dr. Barst found the baby markedly cyanosed with very poor respiration. He turned it head downwards, when it began to cry well, but on being placed on a pillow the cyanosis returned. This was repeated several times. Prolonged artificial respiration and a hot bath failed to effect lasting improvement. Finally the baby was given an injection of 3 minims of pituitary extract into the buttock. The effect was instantaneous: the cyanosis disappeared, the respiration became normal, and the quality and volume of the voice became satisfactory. Four weeks later the baby was quite well.

ABSCESS OF FRONTAL LOBE.

DR. H. W. BERNARD (Dublin) writes: The case reported in the JOURNAL of October 4th (p. 622) ought to be of interest to general practitioners and dental surgeons, since the primary cause of the cerebral abscess was possibly left canine tooth root trouble, with infection of the antrum, purulent catarrh of the turbinates, and nasal mucosa. Septic phlebitis and infection of the left frontal sinus may have been present with necrosis of bone, or phlebitis extending to the frontal lobe. Pyorrhoea, with its resultant toxaemia, may bring about dangerous results, but the upper jaw stumps should, I think, be attended to first, especially long canine stumps, since they approach close to the floor of the antrum.

GOAT'S BUTTER.

FROM a paper contributed by Mr. F. Knowles and Mr. J. C. Urquhart to the last meeting of the Society of Public Analysts it appears that owing to the increase in the number of herds of goats in this country the amount of goat's milk butter now sold is larger than formerly. They have made a number of analyses and find that the Polenske value varies from 4.9 to 8.7. This, if interpreted in the light of the usual standards of cow's butter, would erroneously be assumed to indicate adulteration.

The Polenske value of a fat is a numerical expression indicative of the proportion of fatty acids which are volatile and insoluble in water. When it exceeds the number peculiar to butter-fat the excess is interpreted as an indication of admixture with a vegetable fat, such as coco-nut oil. The Polenske value of the fat of cow's butter is never above 3. An observed Polenske value higher than 3 in goat's butter has not the same significance as in the case of cow's butter. Neglect of this fact would lead to an erroneous judgement of the purity of the sample.

MECHANICS OF SUCKLING.

DR. T. A. MACGIBBON (Christchurch, New Zealand) writes: In reply to Dr. C. J. Aitken (July 12th, 1924, p. 88) may I state that the tongue *does take part* in the act of suckling. More than ten years ago I propounded, in a letter to Dr. Logan Turner of Edinburgh, a theory as to the mechanism of suckling in its relation to the moulding of jaws. This theory—it is hardly a theory—has been copied almost word for word in Dr. McKenzie's book, 1920 edition, on *Diseases of the Ear and Throat*. In suckling the orbicularis oris muscle grips the first curve of the breast where are the ampullae. The milk is squeezed into the ducts of the teat, which, being erectile, is distended and elongated, and lies between the tongue and the hard palate. The final action is compression of the ducts by the tongue against the hard palate and the ejection of the milk on to the posterior third of the tongue, where it is automatically swallowed. The protrusion of the tongue occurs just before suckling, and is done to drag the teat or nipple into the mouth, where it is grasped. The buccinators, which are used forcibly in true suction, are only rendered tense to act as fixation points for the powerfully acting orbicularis. Where the buccinator is used for suction, as in bottle-fed babies, the extreme contraction compresses the delicate jaws and causes deformity. This is one of the chief causes of jaw deformity.

PARTURITION AT THE AGE OF 13.

DR. J. F. DOW writes: At 6.30 one morning I was called to a confinement, of which I had no previous knowledge, at a remote farm. I found a girl, aged 13 years and eight months; beside her on the bed was a fully developed male child, living, and with an evacuated afterbirth attached. The vulva was much swollen and oedematous, and protruding from it was a large clot. The uterus was well contracted; gentle pressure expelled the clot and controlled the haemorrhage. The appearance of the external genitals was then extraordinary; just a trickling of blood from an aperture, the diameter of an ordinary pen, in the surrounding swollen mass. Birth had obviously taken place at least one hour before. The pulse was 110 and the patient had a moderate degree of shock. The history of the parturition was pitiful: she had come home from the village school in pain forty hours previously and had lain in bed unattended and terrified till my arrival, ignorant of her pregnancy and the reason for her pain. I had her transferred at once to the local Poor Law institution; there, under care and kindness, her mental state improved. There was no perineal tear, but some intravaginal sloughing. She and her baby, weighing 6 lb., are recovering normally, and are yet another instance of the wonderful care of Mother Nature.

PNEUMOCOCCAL POLYARTHRITIS.

DR. T. GERALD GARRY (Cairo) writes with reference to Dr. Gubb's paper: Cases similar to that he describes were very frequent as a sequel to bacillary dysentery (from which apparently his patient suffered) among soldiers in the Near East during the war, and generally recovered under appropriate antidysenteric treatment, without ever ending—in uncomplicated cases—in suppuration. I think it extremely probable that examination of the faeces would have cleared up some doubtful points, and that to the "numerous pneumococci" could not be attributed the *fons et origo* of the malady.

WHISKY AND CANCER.

DR. JAMES JEFFARES, (Kegworth, Derby), writes: Malignant disease being very prevalent in my district, many cases have come under my care in twenty-five years of general practice. During this time I cannot recollect one case occurring where the subject was a whisky drinker; in beer drinkers occasionally; but the majority of cases occurred in people who were either total abstainers or very moderate, and during the past few years the disease has increased with alarming rapidity. I wonder if this increase is in any way due to the increased duty on whisky which practically prohibits its extensive use. I would be interested to know if any other general practitioners have had a similar experience to mine, for if it could be proved that whisky was a preventive it might open up a field for experiment in treatment with whisky or one or more of its constituents.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 37, 41, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 38, 39, and 40.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *132*.